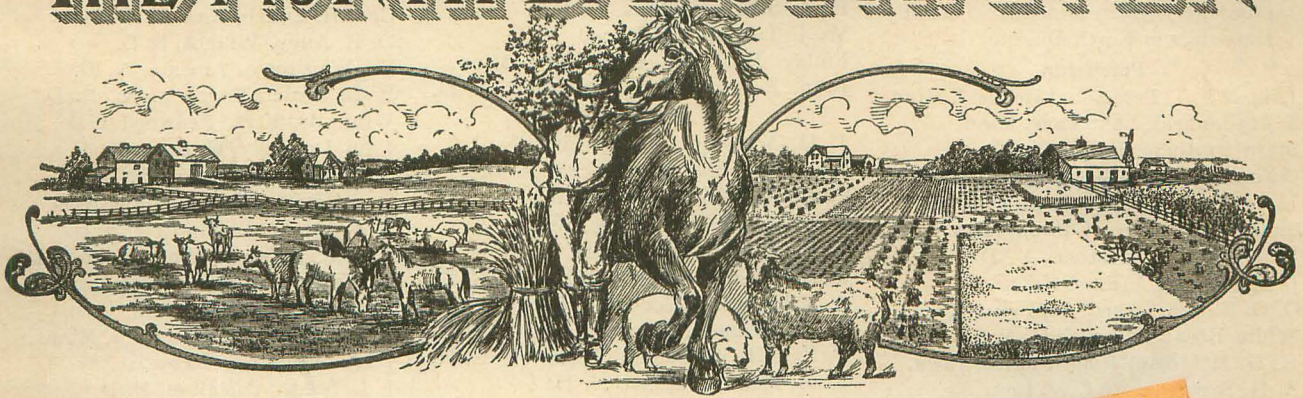


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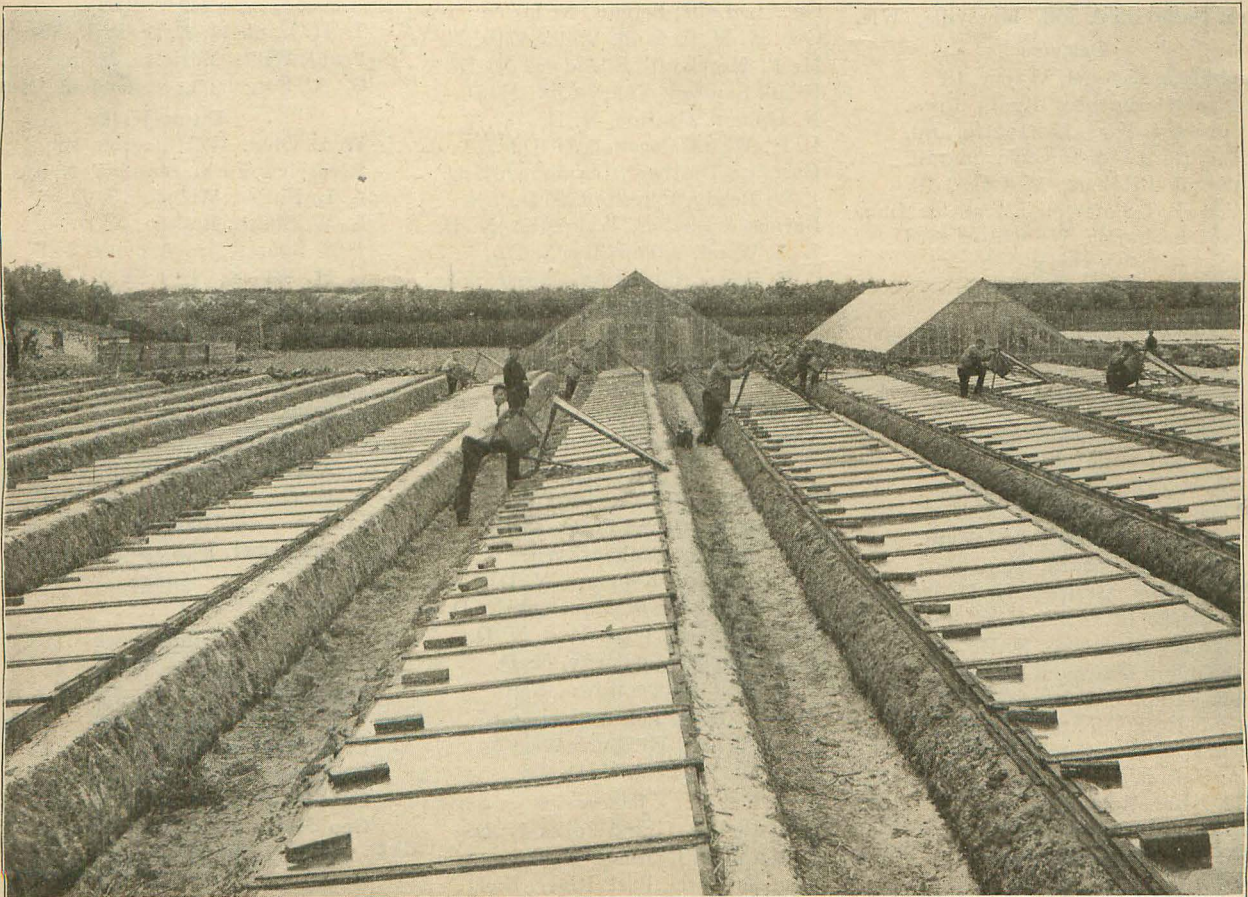
Alex Alin

Jan 11

Vol. 9, No. 10  
LISBON, N. D.

APRIL 15, 1908

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FARGO, N. D.



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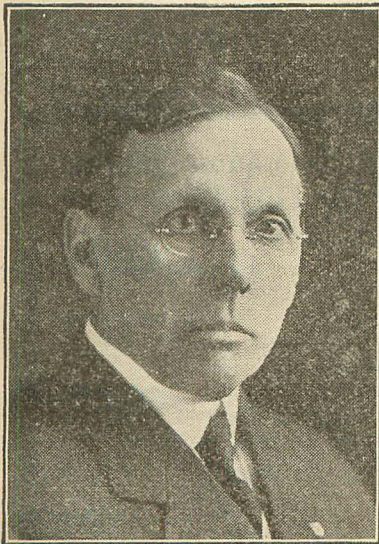
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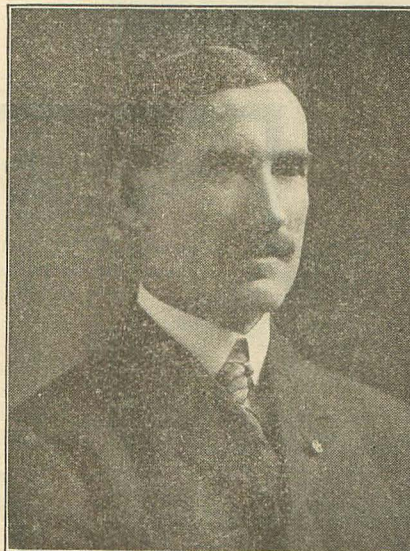
Tom Marshall, Republican candidate for U. S. Senate—"The man who does things and does them well."

For 35 years a resident of the Dakotas, commencing at the bottom as a section hand, then surveyor, merchant, banker, farmer and stock raiser.

A member of the state legislature in 1899 where he first advocated Federal grain inspection, insurance of bank deposits and was one of eight Republicans to vote with the Democrats and pass a railroad rate law.

Promoted to Congress in 1900 where for eight years he has been known as "the man from North Dakota who does things." Father of the rural free delivery service in this state; opened Devils Lake Indian Reservation; advocated and secured the passage of free alcohol bills; introduced and will pass a pure paint bill; and is aiding Senator McCumber to pass the Federal grain inspection law.

Is a Progressive Republican and opposed to the further rule of "McKenzieism" and the corporate domination of state politics. Stands with Roosevelt for the square deal for everybody with special privileges for none.



### FOR CONGRESS

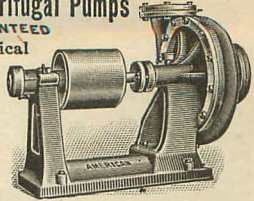
I am a candidate for the Republican nomination for Member of Congress before the Primaries to be held on the 24th day of June next, and earnestly solicit your support.

I believe in the repeal of the tariff on lumber and in a general revision of the tariff schedules. Am in favor of a national grain inspection law and in the general policies which have been advocated by President Roosevelt. I have lived in the state of North Dakota for over twenty-six years and have a thorough knowledge of the needs of our people.

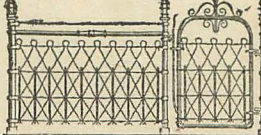
Should I be nominated and elected, I will use my best efforts for the best interests of all of the people and all parts of the state. Respectfully,

L. B. HANNA

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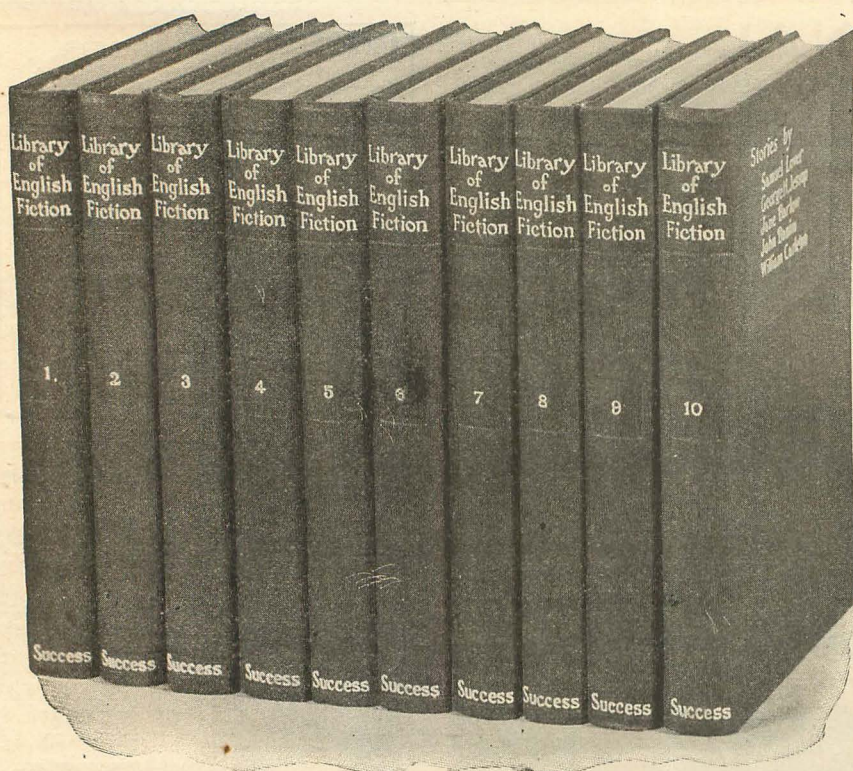
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# THE NORTH DAKOTA FARMER

Vol. 9, No. 10

LISBON and FARGO, N. D., APRIL 15, 1908

50 Cents a Year

## MY EUROPEAN TRIP

By PRES. J. H. WORST, N. D. A. C.

### VALUE OF BARNYARD MANURES. SOME EXAMPLES IN VEGETABLE GARDENING

J. H. Worst

Vegetable gardening is carried on extensively in the vicinity of all large European cities. To cite a concrete example, I will here give an account of what one gardener is able to accomplish on a small area of ground.

Near The Hague, in Holland, a man by the name of Velders has a truck farm of twenty acres. This farm lies within a mile and a half of the North Sea and is situated in the midst of the sand dunes which abound along the northwest coast of Holland, varying from one to two miles in width. The pure sea sand composing this farm is about ninety feet in depth and contains no fertility except what is annually applied to it. The water table, however, lies near the surface and soil moisture is therefore abundant.

The only fertilizing agents Mr. Velders employs are horse manure and cow manure; the former is purchased from the livery stables in the Hague and the latter from Skeedam, a city engaged chiefly in the manufacture of alcohol, situated about forty miles distant, where the mash and slops from the distilleries are fed to cattle.

The cow manure, which comes in semi-liquid form, is transported in canal boats and stored ready for use, in large cement lined tanks, constructed for that purpose on the farm. The horse manure also is transported in boats and is ricked up until needed, in long narrow stacks along side of the canal. Canals, by the way, furnish the means of communication between all the villages and cities of Holland.

In the early springtime when the various garden plots are being prepared for the seeds or the young plants, a layer of horse manure, several inches in thickness is spaded under. This is covered over with several inches of sand, then overspread with a layer of cow manure

and several inches of sand put on top of the latter. The plot is now ready for the seeds and young plants. The placing of the manure is a tedious process but the purpose of the above described arrangement has been well thought out. The heating properties of the horse manure together with the effect of sunshine on the sand makes the garden a veritable hot-bed; while the cow manure, nearer

are two and one-half feet wide by five feet long and reach from ridge to ridge. An alleyway about two feet wide separates the rows of glass frames. Altogether 3,600 such frames were in use in this garden. The distance between the glass and the plants beneath is fully sixteen inches. To give the plants ventilation during the heat of the day, the ends of the frames are raised a few inches at one end by inserting a short prop. During early spring and late in the fall when the nights are cold, mats made of rushes woven together are spread over the glass frames. Every morning these



Planting Vegetables in the Sand.

the surface, furnishes most of the required fertility.

About two acres of this garden are devoted to cucumber culture—the large, dark green, curve-shaped variety, so common in Europe, are chiefly produced. These are grown under glass in the following manner. Parallel ridges of sand are raised about sixteen inches high and five feet apart, which run lengthwise of the plot. These ridges of sand are supported on the inside by one-inch boards. The young cucumber plants are set between these ridges, which are covered over with glass frames placed side by side. The glass frames

mats are rolled up and laid aside until required again in the evening. Thus protected, cucumbers are grown from early spring until quite late in the fall and are Mr. Velder's most profitable crop.

In addition to cucumbers, cabbage, cauliflower, radishes, lettuce, carrots, potatoes, onions, beans, beets, peas, etc., are grown. The various vegetables are so arranged with regard to the period of their maturity that, from the same ground, one variety is being harvested while two or more varieties are still growing. The purpose is to make the vegetable harvest continuous, in all parts of



the garden, thruout the entire season. There were rows of cauliflower three feet apart, rows of lettuce growing between the rows of cauliflower, and the spaces between all these filled with carrots. When the earliest of these vegetables is ready for market its place is immediately filled by some other vegetable, and so on. In one bed spinach, peas, lettuce and carrots were growing. All the ground was occupied. Cauliflower and

age of 750 cubic meters of horse manure per year which costs \$1200, and 720 cubic meters of cow manure which costs \$920. After deducting all expenses, including rent of land, his net profit during the past few years has averaged fully \$5000 per year.

Mr. Velders, personally, is a plain farmer and like his farmer neighbors appears in overalls and wooden shoes, not only directing the work, but working

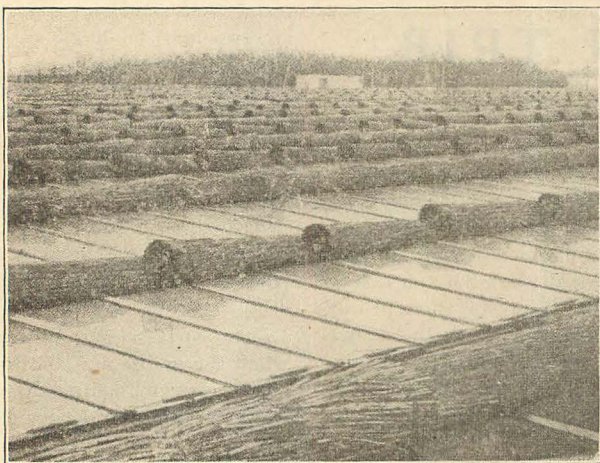
encouraging. It also affords a fine illustration of what can be done, even under adverse conditions, where ingenuity, patience and energy, spurred on by necessity, unite to accomplish a purpose.

I asked Mr. Velders what the land would produce without applied fertility. He looked at me pityingly for a moment and replied with emphasis—"Nothing."

The above is an extreme example of highly intensive cultivation as practiced in European countries, but by no means an isolated one. Everywhere intensive agriculture is practiced, with due regard to crop rotation and the liberal application of fertilizing agents.

Long experience has taught agriculturists over there the value of manure and the advantage of diversifying their crops. It has done more. It has taught them the utter futility of attempting to make a success of gardening or farming without intensive cultivation and the strict observance of established systems of rotation and fertilization.

The same laws apply here in North Dakota and thruout the northwest. It would not seem advisable for us to go to the extremes they practice in matters of cultivation and in the application of fertilizing agents, but we can afford to go a long way in that direction and profit by it. The fact that our soil is new gives us no license to expect that it will continue productive beyond a limited number of years of continuous cropping to wheat, and that without manure or even proper cultivation. Already complaint comes from many quarters that the average yield of wheat is gradually diminishing and the quality is falling below the standard that prevailed in years



Mats for Covering Glass Frames

spinach grow together, followed by a crop of endives that was about ready to market, with a crop of beans nicely started for late market. Also three crops of lettuce and one of spinach; two of spinach, one of lettuce and one of beans; four crops of vegetables, finishing with beans, etc., are examples of intensive vegetable cultivation. As many as five crops of carrots are grown, under glass, in a single season.

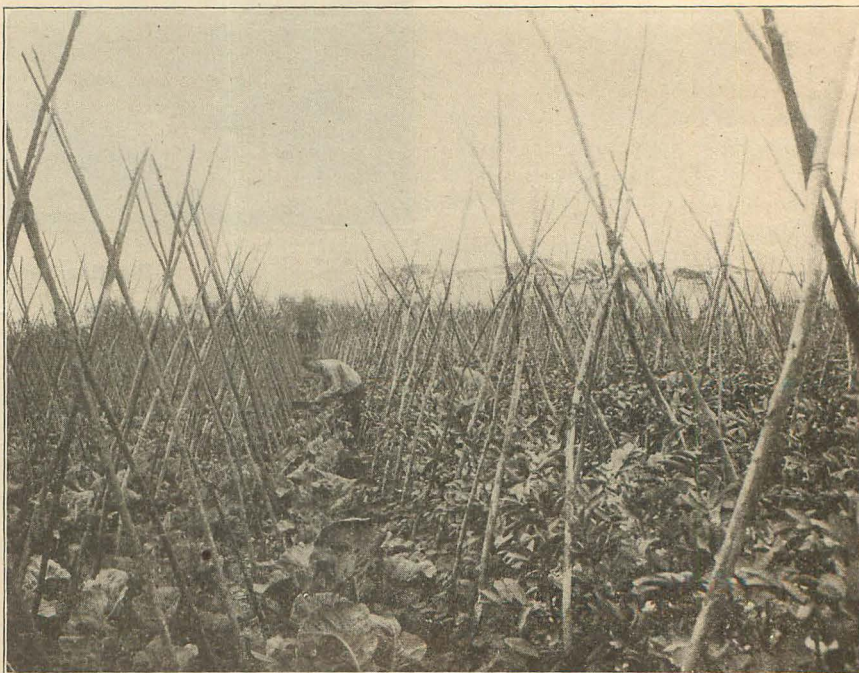
Mr. Velders assured us that every portion of his farm produced from three to four crops a year—an average of three and one-half.

In addition to vegetables the farm produces strawberries, gooseberries, currants, pears, peaches and cherries, and here as elsewhere, all the spaces between the fruit trees or berry bushes were filled with growing vegetables. Even the walls which surrounded the garden were made productive by having peach, pear and cherry trees planted against them and their branches trained to the wall, like creepers, so that the trees occupied practically only the face of the wall. The branches of these trees, hugging the walls like creeping vines, were laden with fruit. One wall about thirty rods in length produced \$125 worth of fruit during the season of 1906.

Mr. Velders employs an average of forty men to haul manure, plant and cultivate the garden, and to market the fruit and vegetables. He pays his men an average of eight guilders (\$3.20 American money) per week, the men boarding themselves. He uses an aver-

with his men whenever his services are needed.

When we consider the fact that this farm is composed of pure sea sand, possessing no fertility—except what is annually supplied, as already described, and that at considerable expense, and that the residue of fertility remaining over from year to year in the soil is very slight, owing to the sandy condition of the land, the net annual profits are very



Peas, Beans and Other Vegetables.



gone by; but what wonder! What different result could be expected when we take into consideration the fact that the same ground has been cropped to wheat without rest or manure, for so many seasons?

The lessons in agriculture which the old world furnishes us should not go unheeded. They have passed thru the ordeal of exhausted lands and the slow, expensive and painful process of restoring them to a productive condition again. The conditions which compelled the older countries to restore the fertility to their once exhausted lands do not as yet exist here in the northwest, but they are coming with sufficient rapidity. The fact that Hollanders raise a general average of forty bushels of wheat per acre on lands that have been farmed for centuries, while in

of cultivation. In a new country where the natural fertility of the soil has never been lessened by cropping these less scientific methods of farming are not unprofitable. But as the land becomes older and the primitive richness is lost by continued use, the question of how best to use the land so as to get the greatest possible amount of the most valuable produce with the least expense from every acre of land becomes more and more an imperative question.

In order to accomplish the end of getting the greatest amount of the most valuable produce from all the land with the least expenditure it is necessary to know something of the nature of the soils. The problems of crop rotation and attendant questions are important, and much attention has rightfully been and is being given to their consideration.

ten years ago, we shall be working far behind the times.

Soil is geological material. A sample of soil is a geological specimen. Its origin and history involve the geologic processes that have affected the region where it occurs. It is the surface geologic formation in that region. To understand the formation of the soil the mineral nature of the original rocks must be considered. The physical work of heat, frost, running water, wind, etc., is an important factor. So also the chemical changes involved in the destruction of the original rocks and the formation of new substances, and the manner in which they occur chemically in the soil, are important factors. And finally the form of occurrence of the new geological specimen we call soil, that is, its structure and texture and physical characters, must all be considered. Soil is thus seen to be a very complex material. It is not only complex in its origin; but its complexity increases as we go from place to place. Hardly any two regions will be exactly alike. And even if they were alike in origin and history of changes passed thru, the conditions of drainage and other external conditions may be so different as to change the character of the soil so far as practical results are concerned.

#### A Soil Survey

A soil survey is a systematic study of the soils and subsoils of a region made by specially trained men, its object being to determine all those properties and qualities stated above, and any others that may be observed, the aim being to determine all the characteristics that will in any way affect the growth of crops. In the soil surveys that have been made under the auspices of the Agricultural College State Survey the field examinations are carried out in much detail. Not only is every section of land examined but each quarter section is individually mapped showing every type of soil. Tracts that may possess any peculiar soil features down to ten acres in extent are represented on the map.

Now it may naturally be asked, what good will this be to the farmer? And we answer, none whatever, unless he makes use of the descriptions of the various soil types and tries to adapt his methods of cultivation to the qualities of the soil as expressed on different parts of his farm. No system of crop rotation, fertilization, or manner of cultivation, will take the place of the study of the particular character and qualities of the soil.



Preparing Vegetables for the Market.  
(Mr. Velder in left of picture, with coat on.)

North Dakota the average is less than thirteen bushels per acre, should prove a potent argument in favor of good cultivation, proper rotation of crops and plenty of manure.

#### THE STUDY OF THE SOILS

By Daniel E. Willard, Professor of  
Geology and Director of Agricultural  
College Surveys

In North Dakota where the soils are universally fertile, and for the most part are still in their virgin condition, little attention has been given to the adaptability to the various types of soil of different crops and different methods

The best results will hardly be realized however unless the character of the soil is understood.

Methods of study change with changes in other things, and our methods of soil study are not the same now that they were a few years ago. We used to know (or thought we knew) a great many things which are considered to be unknown now. Not that we have forgotten, or that these are "lost arts;" we have found out that in some cases what was supposed to be was not. Great advances have been made in recent years in many lines that vitally concern the daily life of all of us. If therefore we expect to pursue the same methods in the study and use of the soil that we did twenty years ago, or even

Boys Interested in Corn Culture Contests Should Read Personal on Page 3.

Hundreds are using Personal, page 3.



## THE PLACE OF DURUM WHEAT

By E. F. Ladd, Chemist of North Dakota Experiment Station

Ever since durum wheat was first introduced into this country the leading millers have denounced it as not being a milling wheat and as unfit for bread purposes. In spite of the opposition offered by the large mills, farmers have continued to grow durum, and the territory devoted to the crop is largely increasing, until at present it is the main wheat crop grown in western North Dakota and in many parts of Montana, as well as in states further south.

While certain mills have so generally condemned the durum, some few of the smaller mills have been grinding it and reporting good results, maintaining that the wheat, when properly handled, could be readily converted into flour, and that the products produced from the same were of good quality.

While this controversy has waged strong between the contending interests the wheat has, thru years of growth, become better acclimated, its properties less variable than when first introduced, and the poorest strains have been weeded out until at the present time the varieties mainly grown by the farmers are the Aronautka and Kubanka. These two wheats seem best adapted to the conditions of soil and climate, and are the ones found by millers to give the best results for flour and bread production.

While the big mills have decried the growth of durum wheat, it has been repeatedly charged, over and over again, that the big mills, especially those of Minneapolis, were using durum wheat along with spring wheat. This they have persistently denied, but if the truth be known, perhaps, it would be repeating the same old story with regard to the history of Kansas wheat in the milling circles of Minneapolis. It has even been charged of late that from 5,000,000 to 6,000,000 bushels of durum wheat are annually ground by the Minneapolis mills, and it is well-known, by those who have made careful investigations, that the mills of Minneapolis are not the only ones in Minnesota where a stream of durum has been fed in with other hard spring wheats and this to the extent of from 10 to 30 per cent. If the durum wheat is so inferior, is it commendable on the part of the millers to grind this product with the hard wheat and sell it to the consuming public without informing them of its presence? If the product can be ground to advantage with other spring wheats, if it is equally good for the production of flour, then, why should not growers of the wheat benefit in the price?

In 1906 the Honorable Secretary of Agriculture reported that not less than 50,000,000 bushels of the wheat produced for that year was durum, or, approximately, one-twelfth of the usual wheat crop. Of this only about 12,000,000 bushels are said to have been exported. Certainly, then the balance must have been consumed by the mills of this country. If approximately one-twelfth of the crop has come to be durum,

then it is an important matter to the farmers of this country, and this is particularly true for North Dakota, especially the western half of the state, where probably not less than 20,000,000 bushels have been produced; and each year the proportion becomes larger, as the western half of the state becomes more thickly settled.

Durum wheat can be grown in regions where other spring wheats would fail to

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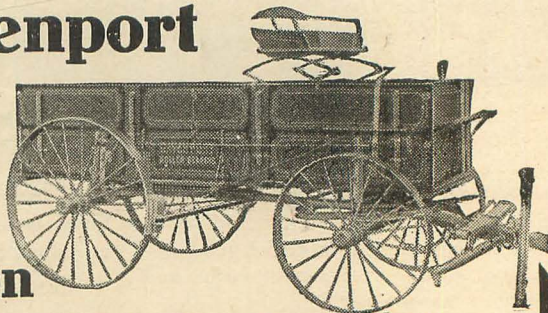
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produce a paying crop. It withstands drouths better, and thrives best in regions of low rainfall. It is claimed that it will grow successfully on poorer soils and produce a good crop than will other wheats. It is more rust resistant, and is less affected by insect depredators. The durum does not do its best in regions of high rainfall, and the continuous growth of the wheat in such localities would, we believe, from experiments thus far conducted, result in the deterioration of the quality and would be a real detriment to the farmers of the state. Therefore, in the Red River Valley and in the eastern part of the state, the growing of durum wheat should not be encouraged, but, certainly, for the western part of the state it is peculiarly adapted; and as it is grown longer in the same section, it produces a product much improved for flour and bread production, if we may draw safely our conclusions from experiments which have been made by the Experiment Station in growing this wheat at its branch stations at Edgeley and Dickinson.

So great has been the opposition on the part of the large mills to the durum wheats that they have forced its price down from twenty to twenty-seven cents per bushel below that of other spring wheats. They have insisted on a different grade for the durum, and the spread in prices between No. 1 Northern spring wheat and No. 1 Durum wheat has been as great as twenty-seven cents during the past year, and on Friday, March 6, the difference in price at Minneapolis was quoted at twenty-one cents per bushel.

If the millers, by their combined efforts continue hostile toward durum wheat, and because of the inactivity of those who are interested in the growing of durum, an injustice has been done, then, it is time that the farmers and those interested in the welfare of the growth and development of our state, should come together and consider the milling and baking qualities of durum wheat as compared with hard spring wheats and see what can be done to secure a better recognition for this crop.

If there were grown 20,000,000 bushels of durum wheat in the state, a difference of twenty cents per bushel means a loss of \$4,000,000 to the people of North Dakota. Supposing that we can by organized effort overcome the hostility to durum and save even one-half of this difference, there comes to the people of North Dakota a clean profit of \$2,000,000 wrenched from those who have enjoyed its dividends in the past.

The Department of Agriculture was the first to introduce durum, and Mr. M. A. Carleton, Cerealist of the Department, has repeatedly maintained that the product is possessed of superior

qualities as a flour producing wheat. That there is some justification in this claim, is further borne out by the statement of Prof. David Chidlow, who says:

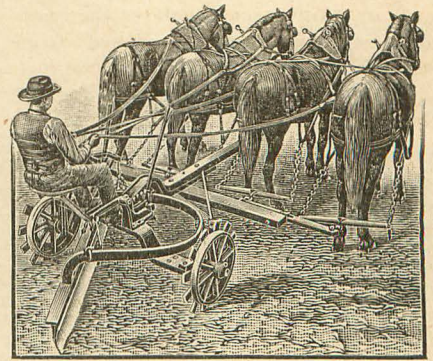
"Much of the discussion centering about durum wheat for bread-making, has been based upon a misconception of some of the elementary principles of bread-making."

It is true the durum flours differ in properties from that of either the spring wheats, Kansas wheats or soft winter wheats. The durum wheats are richer in nitrogen than either of the others and the quality of the gluten is likewise different. While the durum wheat does not make as large a loaf as the spring wheat flours, it is much superior in this respect to flours from the soft winter wheats. I am convinced that durum wheat flour will make good bread when it is made by methods best adapted to its use, but it does not make the same kind of bread as that produced by other flours, having more of the orange yellow, but opposition to flour or to bread which has something of the yellow can only be due to prejudice.

Says Dr. Saunders of Canada with regard to the bread produced from durum:

"Taking all its characteristics into consideration, I have no hesitation in saying that the bread produced from this sample of wheat was of excellent quality."

In experiments reported by Dr. Saunders, it stood high in baking



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From the foregoing it will be observed that others who have made experiments with durum wheats for bread production have found that they are capable of producing a product not materially inferior to that of the average wheats, and, in many respects, above the average for the breads produced from wheats grown in the United States.

#### Milling Experiments

During the past year there has been erected at the Agricultural College probably as complete an experimental milling plant as is to be found at any College in this country, and the work has been conducted by an experienced miller, who has for years been head miller for one of the large mills in Minnesota.

The wheats used in our experiments were drawn from all parts of the state and, therefore, fairly represented the conditions of the wheat crop for North Dakota during 1906. Summarizing our results for fifteen individual milling experiments with fife and bluestem wheats and a like number of durums, we have as follows:

Fife and Bluestem	Durum
Weight per bu. 59.28	62.5
Av. lbs. milled 129.43	121.02
Percent of Patent Flour 47.47	42.06
Percent, 1st clear Flour 16.92	18.61
Percent 2nd clear Flour 5.66	8.91
Percent Total of Flour 70.12	71.58

In these experiments the flour produced from durum wheat is slightly greater than that produced from fife and bluestem, amounting to an average of 146% in the case of the fifteen lots under experiments. It will be further noticed that the durums averaged per bushel 2.22 lbs., heavier than fife and bluestem for clean wheat. This difference in weight over the measured bushels would, in yield, upon a section of land averaging twenty bushels per acre, mean 440 bushels increase, or, on the 20,000,000 bushels of durum estimated to be grown in North Dakota, it would mean an increased yield by weight, over the measured bushels of fife and bluestem, of 733,333 bushels. The patent flour produced from the fife and bluestem is 5.47 % greater than that produced from durum, but this would be to a considerable extent overcome in a longer milling system, as has been pointed out by the miller, who has been in charge of these tests.

It should be pointed out, however, that the bluestem and fife wheats seem to mill with less power and more freely than do the durums. Here, again, it should be borne in mind that the milling methods, at present in vogue, have been especially developed for fife and bluestem, and experience may be ex-

pected to improve the tempering and milling methods or durum. I am informed by old millers that when the bluestem was first introduced, the millers were strongly opposed to it on the ground that it did not mill as well and freely as fife, generally grown at that time. It took some time for the millers to become educated to grinding the bluestem. It is quite likely that in time we shall hear less complaint from the millers regarding the milling qualities of durum. The longer it is grown in this country, the more fully it becomes acclimated, and the more nearly in milling qualities will it approach the millers standard. The durum which have been grown at the branch station at Edgeley for a number of years, we find to be much superior to those grown from other parts of the state, indicating the kind of improvement that is made where careful selection and cultivation is given to this crop.

#### Baking Tests

Baking tests have been made with all the grades of flours produced from the wheats as milled. In general it may be said that durum flours produce a bread having more of the creamy yellow than do the best of the fife and bluestem flours, but quite a few fife and bluestem flours are equally as yellow in the patent flour as is the durum. In the case of the first and second clears, the contrast is less marked than in the patent. In fact, the durums often give a lighter colored bread than do some of the fife and bluestem, especially for the second clear. Why we should demand "golden yellow butter" and "snow-white bread" is hard to understand. Undoubtedly, it is due to a considerable extent to the results of a wrong impression on the part of the consuming public, for in neither case are these colors, necessarily, a badge of superiority, since they are largely of artificial production in the products now found upon the market. The butter is colored by the addition of a dye, and the flour is bleached by the means of a powerful, physiological active chemical agent.

Personally, I like the flavor of bread well made from durum flour. The manner of making the bread is of more importance to me than the mere color of the flour itself. If the millers were obliged to label their flours correctly and so show that they are durum, or, that they contain a certain proportion of durum, the public would soon come to recognize the value of this product; and if they did not bleach the flours to make them resemble the same standard and thus mislead the public, each flour would stand upon its own individual merit, and the superior quality of the northwestern wheats would again become evident.

Summarizing the results of our bread-making tests we have for the several grades as follows:

Patents				
	Wt. of fl. gr.	Wt. of loaf gr.	Vol. of loaf cc	Color
Fife	343.1	510.5	2103.	1.93
Durum	350.5	524.1	1993.9	2.40
First Clear				
Fife	341.9	513.7	2044.	3.3
Durum	356.3	522.6	1868.8	4.11
Second Clear				
Fife	339.6	510.9	1905.	5.2
Durum	345.1	521.9	1674.	4.4

Taking all the results of the ninety-three samples of flour tested in baking experiments, we find the fife and bluestem requiring rather less flour and producing a slightly larger volume, but in weight the durum averages highest. The bread produced from the durum flour likewise remains moist for a longer time than that for the fife. It has a better flavor, better texture, but in color the bread is not as white as that produced from fife and bluestem. In our baking experiments the effort has been to produce not bulk from excessive use

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of yeast, but, rather, such a loaf as the consumer would prefer. It may be unfair to draw conclusions at this time with the limited number of experiments that have been made, but, certainly, ninety-three baking tests upon wheats drawn from fifteen sections of the state, should give us something with regard to the relative value of the two classes of wheats. From the results of our experiments we are lead to conclude that:

First: Durum wheat has come to stay because it is especially fitted to grow in regions low in rainfall and should be recommended for the western half of the state.

Second: It will, in parts of the state having a low rainfall, produce a full average crop when fife and bluestem would fail to make a paying crop.

Third: Durum should not be grown in the Red River Valley as a general crop, for in regions of larger rainfall it seems to deteriorate, rather than improve, its bread producing qualities.

Fourth: Experiments have conclusively demonstrated the fitness of durum wheats for milling purposes and for bread-making.

Fifth: It would seem that the big millers have been overactive in condemning durum as a milling wheat.

Sixth: The producer and interested parties have not organized to protect their own interests, and to demand proper recognition for durum wheat and the flours produced therefrom.

Seventh: There are different types of durum and only those best adapted for flour producing should be generally grown by our farmers.

Eighth: The millers, while decrying it as worthless, have been grinding durum with other hard spring wheats and selling the flour without informing the public of its presence.

Ninth: That, if durum flour is inferior to that produced from other wheats as ground at the big mills, then it should be so labeled as to inform the public, and to prevent unfair competition against superior products.

Tenth: That, if durum wheat produces a flour equal to that produced from other wheats for the purpose of bread-making, then there should not be such a wide spread in price between the two wheats, and the farmer should be paid in proportion to its value.

Eleventh: As the result of our own experiments, we should say that not a little of the prejudice against durum wheat has been created by a wrong impression, and seems to have been fostered by selfish interests.

Twelfth: It is recommended that farmers and others interested in the

growing of durum wheat organize and use their influence to secure a proper recognition of the flour and bread producing qualities of this product, and therefore, a better price for the wheat itself.

Thirteenth: As citizens of North Dakota we should recognize the merits of durum and either separately or in a flour blend make a market for it under its true name and not be buying and consuming it under a false name.

Fourteenth: We should insist that all flours be truthfully labeled as to the wheat used, and that when bleached, the public should be so informed, and this in the interests of the North Dakota farmers and millers.

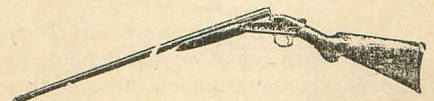
#### ALFALFA IN NORTH DAKOTA

By James Holes, Fargo, N. D., Before the Grain Growers' Convention

Alfalfa, or Tuzern Clover, has long been known as a foreign plant in many parts of the world but it was supposed for a long time to be an arid plant and would only thrive in a semi-tropical arid region. But with the introduction of seed from Turkestan and later from Siberia, a plant has been introduced into the northern states of America that will not only stand severe drouths, but extreme cold. As to the value of this plant there can be no controversy. The question is how can we raise it and what use can we made of it? First, the soil to be devoted to Alfalfa should be well drained, or land that slopes so that water will not stand on it. Second, it should be put in a fine state of cultivation by first plowing well, harrowing thoroly, and rolling if necessary, to make it fine. Then, I would recommend sowing broadcast with a wheelbarrow seeder, twenty pounds of the best and purest alfalfa seed to be had and harrow it in with a slanting tooth harrow, or weeder. Be careful and not sow too early as the young plants are tender when they first come out of the ground and are easily frozen. Now I will give you my experience with alfalfa. On May 16, 1906, I sowed three small pieces as I

have recommended, and in sixty-five days it was ready to cut for hay, and I cut it and made hay of it, altho it was rather weedy. In forty-five days after the first cutting it was in full bloom and ready to cut again, but the second growth I left to hold the snow. It went thru the winter of 1906-7 in fine shape. Notwithstanding the spring of 1907 was very unfavorable, frosty and backward, this alfalfa made two good crops of hay of about one and one-half tons each, and the third crop grew about one foot high, which I left to hold the snow and protect the roots. Alfalfa, like all the clovers, is difficult to make hay of in a country like this where it rains during the summer months and the only remedy I know of is canvass shock covers about five feet square with a brick tied to each corner to hold them down. I used 100 such covers last summer and was well satisfied with the result. Alfalfa is well adapted for soiling or for the silo, but for the pasture I have my doubts about it being a success as I know of no other grass that is injured so much by tramping as alfalfa. As a hog pasture, while it lasts it has no equal. Hogs pastured on alfalfa and given a small amount of corn each day will make a larger gain according to the expense than any other way they can be fed. As a pasture for cattle, it is a dangerous grass, but when the cattle become used to it they will thrive and fatten and the beef made from it is the sweetest and juciest I know of. To horses it should be fed with great care, but they will fatten and thrive on it if fed in moderation. I have seen alfalfa growing from the Atlantic to the Pacific, from the Red River Valley of the North where but two crops can be cut for hay, to the Imperial valley of Southern California

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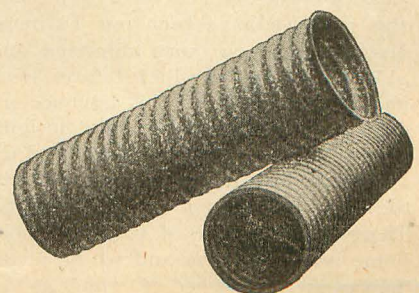
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where from seven to eight crops of hay can be cut each year and I have made up my mind it is the greatest foreign plant known to man.

#### Discussion

Question.—If it is sown for hog pastures will it have to be renewed every year?

Mr. Holes.—It does not.

Question.—Does it need inoculation?

Mr. Holes.—It does not.

President Worst.—Good Manure is the only inoculation needed.

Question.—Can you get it started on sandy soil?

President Worst.—If the water table comes up within a few feet of the surface.

Question.—If sown very thick would it crowd out French weed?

Mr. Holes.—I think it would.

Question.—What does alfalfa give back to the soil?

Mr. Holes.—Nitrogen and humus.

Question.—Are the European any hardier than the American?

Mr. Holes.—I am not able to say. It is not only used as a forage but also as an adulteration for smoking tobacco.

Question.—For fertilizing purposes would you plow it under and if so at what time?

Mr. Holes.—It is a splendid fertilizer when plowed under. Plow under at about the time to make hay.

Remark.—In the northern part of the state I sowed the seed at two different times. Once in the latter part of May and again in July. The latter planting did greatly the best and I mention this as some farmers may think that time is too late.

Question.—How many pounds of alfalfa would you sow to the acre?

Mr. Holes.—About twenty pounds.

#### THE PLACE OF BEES ON THE FARM

By M. V. Facey, Preston, Minn.

The last decade or more has been notable for the great advances made in all departments of human life. In this general and insistent advance, in the broadening of ideals and in the increase of knowledge and its effective application, the farmer stands in the very front ranks and the most effective agencies in this advance have been our Farmers' Institutes and our very numerous and ably edited and conducted farm journals. As a result of this advance industries, which formerly were insignificant, have in some cases developed into gigantic proportions as for instance in the case of the egg and poultry business. There is one source of income, whose home is on the farm and whose possibilities are undreamed of, which as yet has received but scant or no attention at the hands of either our institute work-

ers or our farm papers who have very little more conception of the possibilities of bee culture than our forefathers had in the days of the box hive and the straw skip when the swarming season was marked by the ringing of tin pans and tooting of horns and when most of the crop of honey was secured by brimstoning the bees and then crushing the comb and allowing the honey to drain off. The honey thus secured was mixed with pollen and other impurities and would not today be allowed on the market. The crop was then necessarily small and the results always uncertain. Dating however, from the introduction of the movable frame hive greater progress has been made in bee culture than in any other department of animal industry until today the bee is more responsive to intelligent handling than any other creature.

Our continually extending knowledge of the work has also greatly increased our returns until today we have almost trebled the yield of honey per hive and it has been as greatly improved in quality as it has been increased in quantity. There is today no food purer or more healthful or delicious than a nice quality of extracted honey.

A number of the large bee keepers have from time to time advocated the passage of a national law which would deprive the farmer of the right to keep bees and limiting this privilege to specialists. I am a specialist in bee culture but I have been and always shall be opposed to the passage of such a law. There is no probability, however, that such a law will ever be enacted. Great as the industry has become yet there is probably two colonies of bees kept by farmers to every one kept by specialists, and the amount on the farm should be increased many times over.

Wherever conditions are favorable for bees they should take their place as part of the farm stock. Farming is a busy life but two hours a week during the summer months will cover all the work necessary to care for 12 or 15 colonies of bees and they will net in a good year from \$100 to \$120 and from thirty to fifty dollars during a poor year and if you figure up the returns you thus receive for your time you will find there will be nothing else can compare with bees in returns for investment and labor.

While bees are thus gathering the honey which would otherwise go to waste on the farm they are also greatly increasing the yield of everything which they visit more especially if it be an orchard or a clover field, where the yield of fruit or seed, as the case may be are very greatly increased by their visits.

Before investing in bees, however, it is very necessary to get ride of the idea that you can succeed with them without

preparation. There is little success in the world worth having unless we are willing to pay the price. Get a good work on Bee culture and familiarize yourself with the most up-to-date and successful handling of bees. Make yourself familiar with all the processes of the hive then get a couple of colonies of bees and as you study the subject you will familiarize yourself with the work and you will soon acquire the requisite knowledge and skill for handling bees and making them pay.

As the work of beekeeping is as fascinating as it is profitable, a great many farmers cannot resist the temptation of running the number of their colonies up to forty or fifty swarms. As the swarming as well as every other operation connected with the colony is under the beekeeper's control and is attended to at his convenience, bees can be so increased and cared for without any interference with the regular work of the farm and that number of bees will frequently net in returns as much clear profit as will forty acres of land under ordinary cultivation in a fair season.

The greatly increased production of honey by farmers might lower its price somewhat but not as much as many beekeepers fear. This is one of the arguments against any great extension of beekeeping outside of specialists, but it is largely a false alarm. The consumption of honey is increasing at much greater strides than its production and it will continue to increase. If the day should ever come when the use of honey should supplant the use of all the commercial syrups today in the market it would mean an untold blessing to the country and a great saving in doctor's bills.

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## ON FROM WASHINGTON.

By GUY E. MITCHELL

During the year 1906 inspectors of the Department of Agriculture placed the meat-inspection brand or label on nearly 35,000,000 carcasses.

The importance of keeping the closets in the country in a sanitary condition is hardly realized. There is absolutely no reason why these places should be in the unclean and insanitary condition they frequently are. They are too often a harbor and breeding-ground for flies, which are notorious as carriers of disease, are kept in a state of disrepair, with unsuitable or leaky buckets, and are generally a place of corruption and evil odors.

There is nothing much better in the vegetable line in winter than dried lima beans—not matured and dried, but shelled green when about two-thirds grown just as tho for the table, and instead, dried in the sun. Soaking will swell them out, and cooked they are only a shade less toothsome than the fresh limas. They are far superior in flavor and sweetness to canned lima beans. There are at least two vegetables which it always pays to raise enough of for drying—limas and okra.

### HARROWING WHEAT

A test of harrowing wheat after it has been seeded has been made each season for several years. The following outline shows the plan of the trial.

1. Harrow just after wheat comes up.
2. Harrow when wheat is three inches high.
3. Check.
4. Harrow when wheat is six inches high.
5. Harrow once every seven days until wheat is six inches high.

No positive results have yet been secured in this trial. In 1904 the plats which were harrowed matured later and rusted much worse than those not harrowed. With rains as frequent during the period when the harrowing would have to be done as they were the past two seasons, little benefit could be expected from harrowing. In dry seasons or in sections where the harrowing could be done at the proper time there is no doubt but what good results would be secured. However, the success attained by harrowing wheat will depend largely upon the ability of the one doing the work.

### LATE BEARING OF APPLES

Complaint is sometimes heard that apple orchards eight or ten years old do

not bear any fruit. The fact of the matter is, the trees are not old enough. Trees can be stunted and dwarfed into bearing crops before this age, but trees ten years old, if well cultivated and fed should be busy making heavy wood growth, and much wood growth and fruiting do not go together. Many varieties do not begin to bear much until twelve years old. Such trees can be forced into earlier bearing by stopping cultivation and seeding down to grass but it usually considered better to keep cultivating and feeding until the tree naturally gets ready to bear, when it will be so much larger and its capacity so much greater that the size of the crops will more than compensate for the wait. Such trees too, will be longer lived than trees which have been stunted and forced into early bearing. Orchards should be shallow cultivated up to the middle of summer each year and by the time they are twelve years old, the trees will want all the ground.

### ORIGIN OF PRODUCTS

#### The Evolution of the Reaper

Most of the grain of the world has been reaped by knives and sickles. In 1794 a Scotchman invented what was described as a marvelous and wonderful machine for cutting grain with which as much could be done in a day as seven men could accomplish with sickles. This wonderful revolutionizer was only the cradle. The first reaper invented in this country was by Hussey in 1833. American invention in useful implements began to assert itself strongly in the early part of the last century. McCormick took out his first patent for a reaper in 1843, altho he had constructed and tested a machine in Virginia in 1831 with some success. In 1852 there was a general trial of mowers and reapers at Geneva, N. Y. Nine kinds of machines contested. Of these not one could start cutting grain without first backing to get up speed. There was a heavy side draft and the machines were exceedingly clumsy. By 1855, about 10,000 mowers and reapers were in existence, nearly all being one-wheeled machines. Even now America was far ahead of foreign builders. In an exhibition of this year in which an English, a French and an American machine contested, the English machine did its allotted work in 65 minutes, the French machine in 72 minutes and the American in 22 minutes. From this on improvements were rapid and now we have the Harvester Trust which Attorney General Bonaparte is attempting to dissolve.

### THE COWPEA AS A TABLE FOOD

A study of the digestibility and nutritive value of legumes has been conducted by C. E. Wait of the University of Tennessee, in which kidney beans, navy beans and three varieties of cowpeas were used in 72 digestion experiments with healthy men wherein the legumes constituted a large part of the diet. Professor Wait found these foods readily digested, and says of them:

"In view of their richness in nutrient constituents, and the extent to which these are digested and absorbed by the body, the legumes deserve a high rank as important food materials. These experiments but demonstrate scientifically what has perhaps been long believed instinctively with regard to the value of white and kidney beans, but it also shows that whatever may be claimed for them may be claimed with at least equal fairness for the cowpea also.

"The cowpea has a distinctive and pleasing flavor and cake prepared for the table in a great many appetizing ways compares favorably with other legumes in respect to both nutritive value and digestibility. Its wholesomeness and possible place in the diet is attested by its long and general use in the Southern States. Under usual crop conditions it is reasonable in price and it could undoubtedly be grown in quantities sufficient to meet any demand. The importance of beans, peas, lentils, cowpeas, and indeed of legumes as a class is each year becoming more generally recognized as a source of protein in the diet, reasonable in cost as compared with common proteid foods of animal origin, and the use of legumes is increasing."

### WAR ON THE CARP

The Maryland legislature is about to declare war on the carp, the most undesirable citizen in all fishdom. It is found to be the enemy of the black bass, the latter a prince among its kind. Upon the spawn of the bass the carp feeds gluttonously; and, for that matter, upon the spawn of many other fish, perhaps not so good as bass, but much better than carp, for all that.

Perhaps no alien ever introduced into this country has failed to come up to its advance notices in such measure as the carp. Every golden promise made in its behalf has faded, drooped, and died. In not one particular has it made good as the saying goes. It isn't fit to eat. It isn't game enough to make it worth while for sport, and it destroys other companions that are both.

The United States Fish Commission brought the German carp to this coun-



try several years ago, and doubtless has been sorry for it ever since. Its ante-introduction qualifications appeared all that such credentials should be. It was declared to be hardy, perfectly at home in any climate or water, and given to rapid reproduction. Farmers were advised to provide themselves with small ponds for their propagation; in this way an admirable and very cheap food supply was to be always on hand—for the carp was said to bite in winter just as greedily as in summer.

Save in the one item of enthusiastic anti-race suicide, the carp has failed on every assignment given it. The alleged superior qualifications of the fish turned out to be delusions of the worst kind. Ponds established beneath a rainbow of hope were afterward drained off amid emotions of intense disgust.

Now Maryland is about to sign its death warrant. When a present pending bill shall have been enacted into law by the legislature posses will be organized for the prompt and effectual extermination of these greatest of piscatorial frauds and swindlers. Other states may be expected to follow this program.

#### MANURING BROME GRASS

In the spring of 1905 ten acres of brome grass which was seeded in 1899 was divided into two equal parts and on five acres about fifteen tons of well rotted manure was added per acre. The five acres which had been manured yielded when cut for hay 14,505 pounds—the unmanured five acres gave 8,965 pounds of hay or 1.45 and .89 tons per acre respectively. This field was too old a sod to remain a good hay producer but as it was needed for pasture a little later it was not considered advisable to plow it up.

A one-third acre plat of brome grass was seeded in 1902. In 1903 it yielded 1.78 tons of hay per acre and in 1904 it was cut for seed. Just after removing the seed crop it was manured heavily with well decomposed manure. The crop of hay produced the following year (1905) yielded at the rate of 2.99 tons per acre. When the crop was removed in 1905 the plat was divided into equal parts and one-half was again manured heavily. In 1906 the part manured gave a yield of 2.75 tons of hay per acre, while the other plat gave 1.96 tons per acre. A vast difference was noticeable between the two plats during the summer and yet the residuary effect of the manuring in 1904 could still be detected. In 1904 the brome grass showed that condition which is called sod bound, but that look disappeared after it was manured. The same conditions were seen in the field trial noted above.

Grass always responds quickly to an application of manure and gives big returns in yield for the time required to do the work of spreading the manure. Hay and pasture fields are considered the best on which to scatter the manure.

The results show that the poor yields of brome grass and its inability to produce stems and long leaves after it has been seeded for a few years is not entirely due to the "sod-bound" condition of the grass. Heavy applications of manure cause the sod to become still denser yet the yield is improved. It is safe to conclude that the reduced yields of brome grass after it has stood for a few years is as much due to the reduced fertility in the soil as to the density of the sod. Previous trials show that brome grass is a ravenous feeder upon the soil fertility and that it used larger quantities of water than most hay plants. However, it roots deeply and sends its rootlets farther for moisture than any other commonly grown grass. No grass surpasses brome grass in its ability to produce a good growth in dry years or under adverse weather conditions.

#### BUILDING MODEL ROADS

Guy E. Mitchell

There is a popular misconception in some quarters that the government has gone into the business of good road construction. It is not the privilege of the Department of Agriculture to build good roads. The office of Public Roads of the Department is very active in good roads work but it is all of an instructive and demonstrative character.

"While it is not part of the scope of the work of the Office of Public Roads," said Mr. M. O. Eldridge, who is one of the most energetic officials of the Department in good roads work, "to construct good roads, as such, it is, under authority from Congress, within our province to give expert advice on good construction, and this has been interpreted to mean that short stretches of model or example roads may be built. The object-lesson roads of the Department have been of great influence in the improvement of the roads of wide sections of country. It is well known that thruout the country, and more particularly in the rural districts, there is a steadily growing demand for information as to the best methods of road construction, at the same time, considering the country as a whole, it is probably true that in no phase of our national development are we so backward as in the extension of hard and durable roads. It also happens that in localities where the people have awakened to the import-

ance of road improvement and are willing to expend money therefor, owing to inexperience or lack of organization, the money is partially if not totally wasted. In other communities, abundantly able to support a system of good roads, very little work is done owing to a lack of knowledge of what can be accomplished with the resources at hand.

"It is in just such cases as these that the work of the Office of Public Roads is proving of signal advantage—in the educational value which it exerts and in practical demonstrations of what can be done. These object lessons in good roads construction must obviously be localized, to a great extent, as for instance, it will not avail one section of the country which had decided to improve its dirt roads to know that in another section a model macadam road is being constructed.

"In many cases," continued Mr. Eldridge, "in which the Department is not able to construct object-lesson stretches of roads, the engineers of the Department are nevertheless able to give advice that enables local authorities to work to much better advantage than they otherwise could. Where only small amounts of money are available for road improvement it is frequently better to improve the highways already existing than to attempt the construction of macadam roads. Special attention has lately been given by the Office of Public Roads to this phase of the question—rendering assistance to communities which are providing betterment rather than reconstruction and the Office has thus been able to bring out some important facts regarding the use of sand, clay and burnt clay for road improvement in large areas of the country where stone material is not readily available."

The community which has good roads but ought to have better ones or the community which has poor roads and ought to have good ones can perhaps get some good ideas at least by corresponding with the Office of Public Roads.

**Hundreds are using Personal,**  
page 3.

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## AT THE AGRICULTURAL COLLEGE.

The farm mechanics department is having several models of machines constructed by different machine companies. They are exact copies of standard machinery, perfect in every detail, and will be used in the class room for demonstration purposes.

S. Fortier, chief of the division of irrigation, department of agriculture, recently visited the college and conferred with President Worst and Professor Shepperd regarding the work to be done at the new Williston experiment station.

Professor Richards is receiving many calls for the "Breeders' Directory," published by the North Dakota Breeders' Association, of which Professor Richards is the secretary. About fifteen hundred copies have been sent out and calls for more are coming in daily.

An interesting political rally was recently held by the members of the class in public speaking, under the direction of Professor Arvald. The most conspicuous political figures in the country at the present day were represented by the different members of the class.

The department of poultry husbandry has two hens with a remarkable eggs laying record. Their average yearly capacity is two hundred eggs. These hens are of the Plymouth Rock breed and have been produced by selection and breeding fowls of unusual tendency toward abundant egg laying.

On February 28th the annual oratorical contest was held at the college. The winners of the local contest represent the institution at the state oratorical contest which is held at Wahpeton this year. W. R. Lanxon of Fargo, whose oration was entitled "The Mission of the Anglo-Saxon," won first place and will go to Wahpeton. Chas. Clark, whose oration was on "A Higher Call to Patriotism," won second place.

A summer school for traction engineers opens here June 8 under the direction of Professor Rose, and continues for four weeks. Traction and gas engineering, grain separation and the business management of a threshing outfit, in fact everything which goes to make a successful thresher, will be taught. The school held last summer, which was the first one of this nature conducted here, was very successful,

about one hundred twenty students being in attendance.

The various commercial clubs throughout the state are discussing the matter of cooperating with Prof. Ladd in enforcing the law in regard to the bleaching of flour.

Miss Miller of Bismarck, librarian appointed by the state library commission, has kindly offered her services in connection with the extension work being undertaken by the college.

About one hundred fifty students, representing all the classes in stock-judging, visited the Huntoon farm south of Moorhead, Feb. 22. Dairying on this farm is carried on on an immense scale. The herd is composed of one hundred fifteen cattle, ninety-eight of which are milch cows. They are housed in a mammoth ten thousand dollar barn, which is modern in every particular.

**NORTH DAKOTA AGRICULTURAL EXPERIMENTATION. FOOD DEPARTMENT-- AGRICULTURAL COLLEGE.**

### FORMALDEHYDE NOTICE

Most of the formaldehyde thus far examined has been found to contain from 37% to 38% of formaldehyde by weight. This is classed as not standard, altho usable.

To answer the question being asked by druggists and farmers, I would say that formaldehyde marked as not standard, therefore, not less than 37% by weight in strength, is safe to use for destroying smut; and I would recommend that of this formaldehyde 1 pound avoirdupois to 40 gallons of water be employed for the present year.

The producers of a large share of the formaldehyde offered for sale in this state, it seems, made the formaldehyde of a strength to conform with the requirements of the new U. S. D., which is not the legal strength in North Dakota. Therefore, for the present year little, if any, formaldehyde shipped into this state is full strength under our State Law. The formaldehyde as tested and marked "not standard" is pure but not of desired strength and can be used with safety one pound to 40 gallons for wheat. I would advise that you so recommend to farmers.

**Boys Interested in Corn Culture Contests Should Read Personal on Page 3.**

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# North Dakota Farmer

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**Vol. 9 APRIL, 1908. No. 10**

If this paragraph is marked your subscription is out. Before re-mitting read **PERSONAL** on page 3. We are trying to help you in your farm life.

**"One Dollar for Three Years"**  
good only till **JULY 1st.**

North Dakota is the great wheat producing state of the Union. It should also be the great flour producing state.

The garden should be near the house, for it is the housewife who must be depended upon to supply the table and away down the lane is no place for the garden. Don't forget the garden.

Durum wheat does not seem to do its best in the Valley. Durum needs a dry climate and should be confined to the western part of the state where it yields much better than either fife or bluestem.

Think of the screenings from our wheat crop for which the farmer receives no pay and yet he pays the freight on this to the terminal and then buys back as mill feed at \$18 to \$20 per ton. Why does he do this?

Next to wheat, dairying should be the most important agricultural industry in North Dakota. This would be the case were we to convert all the wheat into flour in the state and use *here as feed the mill products.*

Prof. Bolley in Bulletin No. 80 shows how to eradicate weeds from our fields by the use of chemicals applied as a

spray. This bulletin is worth studying by those whose farms have become overrun with weeds. Many a law could be improved as well as field by getting rid of the weeds.

Are you planning to grow corn as a crop this year. Corn should find a place on every farm in North Dakota. The fodder is worth more than the cost of growing the crop and the land will the year following if well cared for produce a half more wheat than fields at wheat continuously.

Never will things be right until all stock gambling in food products is by law abolished. The buying and selling of food commodity is a legitimate business, gambling in food product is only another form of highway robbery. Help put a stop to such evils and future generations will bless you.

How about the garden? Are you planning to grow plenty of good table peas, sweet corn, beans, radishes and lettuce? They will not only add variety to the table but save many a doctor's bill in the long run. Turnips, beets, cabbages, parsnips, carrots and cucumbers should all find a place in the garden.

No man ever accomplishes anything by sitting around and finding fault with the eternal fitness of things. Take your coat off, roll up your sleeves and start to do something. Don't be above your job. Do your duty honestly, fearlessly, and stand upon your own feet. Think for yourself, be a man and help make your community better and more prosperous.

With the increase in the dairy industry will come also the silo. At present there are but few silos in the state and silage is fed but little. It is almost a necessity for successful winter dairying. The stock need to do well during the winter months from green or succulent feed and a little oil meal. These will bring the animals thru in good shape and will help to make dairying profitable in this state.

Mangel wurtzels, and sugar beets are profitable crops for any farmer to grow for stock food. It is surprising how much can be grown upon a small plot of land. If you have a proper root cellar or place of storage they are an exceptional food for winter use and help to keep the animals in excellent condition. Stock, as well as man, need some succulent or green food in winter in order to thrive well.

Repeatedly we have urged our readers to grow poultry, chickens and turkeys.

If you have not a flock set a few hens this spring and get a start. The poultry will pay the grocer's bill and you hardly miss the feed to grow and fatten them; besides you have the fresh eggs for home use and an occasional chicken for the table. Too many are neglecting the poultry and the pigs on our North Dakota farms.

It developed at the conference of Commercial Clubs at Grand Forks in the interest of the durum wheat that the spread in price between durum and fife wheat had been from 20 to 27 cents per bushel during the past season. The millers present asserted that the real difference should not exceed eight cents. Then why this wide difference? Is some one benefited unduly by this and the farmer defrauded?

The farmer should see that the wheat which he is growing not only is a good yielder but it must be a good flour producer, otherwise there is no market for it. There is no question but what there is a wide difference between different wheats in this respect. Again some sections are better adapted than others to produce a good flour wheat. The finished product is what the people are going to judge by.

A cistern no matter how large will go dry in time if you continue to draw from it and nothing is added. So will your farm land go broke and you become bankrupt if you keep drawing out fertility and waste more than you use and then do nothing to prevent the loss. Such is the law of the universe. Grow more wheat but grow it on less acres. Diversify and keep pigs, dairy stock and poultry. The prosperous farmer does this.

After all the proper selecting and cleaning of seed is one of the safest and surest means of ridding the land of weeds and keeping it free. Besides a farm free from weeds will yield from a third to twice the crop of weed ridden fields. Every weed takes the place of a stalk of wheat and pumps the water out of the ground. You lose much and gain nothing. Crop rotation and good thorough cultivation of hoed crop like corn will keep the weeds out providing brains, be mixed judiciously with your work.

Recent analysis of farm land soils in North Dakota as reported by E. G. Schollander Superintendent of the Demonstration Farm shows rapid depletion of soil fertility; especially is this true for phosphoric acid, an essential for wheat growing. We must soon improve our methods or buy fertilizers. Which shall it be? It is surprising what a change fifteen years has made in some of our



soils. Let us hope the change will be for the better in the future.

Seed down some of the farm to grass this spring—use clover freely and begin to get the humus back in the land and unlock the stored up fertility of the earth and draw nitrogen out of the air so as to enrich the land. At least one year in six grow clover and grass if you would prosper.

By the way the demonstration farms established by President Worst representing as they do all parts of our state should prove of great benefit to the agriculture of the state. Already much data of value has been secured and year by year as the soils and condition of cropping are studied and the results are noted we shall come to have as it were a barometer of the agricultural condition of our state far in advance of any other state and the North Dakota idea will be taken up elsewhere.

Are you reading President Worst's entertaining and instructive articles in the North Dakota Farmer? If not you are missing a treat that should not be forgotten. These articles are going to do much toward helping our farmers to get a better view of their calling and opportunities. We congratulate our readers in being able to get these letters so entertainingly written by one who has traveled to see and studied European conditions to benefit North Dakota agriculture. What opportunities we have compared with our brothers across the ocean!

Much interest is now centering on the new irrigation projects that open up this spring at Williston in the Northwest part of the state. The new sub-station at this point ensures opportunity for extended research work and the appointment of Mr. E. G. Schollander as the superintendent means careful and painstaking experiments which will be of great benefit to the people of that part of the state. No better man could be found for the place than Mr. Schollander. Let the people cooperate with him in his new work. His experience in conducting the demonstration farms for the past two years gives him a wide acquaintance thruout the state with the needs for this new work.

How about putting out trees this Spring? Are you putting in a good grove to furnish fuel and timber in the future. If not you are making a big mistake. In twenty years a good forest grove of trees will be the most valuable part of the farm. Besides the state will bear a large share of the expense in getting these started. Every farm of 160 acres should have at least 10 acres in forest

trees. What a change this would make in North Dakota! How vastly improved the country! The state would then become an exporter of timber and finished building material, and why should we not? Look at European countries and see what they are doing in forestry matters.

Many North Dakota flour mills are idle, helping the Minneapolis millers hold our state down to the level set for them by interested and selfish organized concerns. Why are you not organizing to get justice for our own farm product—wheat, help to place durum in its proper place and not being handled by those who have been against you for the past twenty years. Some day North Dakota millers will wake up to the real facts and discover where their interests lie. Millers, why are you being undersold in your own local market? If justice was being done to Spring wheat would this be true? Why did the millers organize at Grand Forks? Was it not to try and accomplish just what those working for the farmers were endeavoring to do?

Already North Dakota millers are beginning to get a dose of their own medicine. The big mills are grinding Kansas Turkey Red wheat, so cursed by millers a few years ago, and durum, the price of which they have crowded down, with enough good North Dakota Spring wheat to give it a back bone, bleaching it to look like flour from selected North Dakota wheat and underselling the local miller in his home town, but the consumer pays the same price. If sold on its merits would the yellow winter wheat flour compete with the North Dakota flour ground from our best Spring wheat? Then why do the North Dakota millers want to pull the chestnuts out of the fire for the Minneapolis millers? Who is doing most for North Dakota and its development? Take a look into the future and see where you stand.

The millers have no monopoly in the process of bleaching flour. If they have the right to use nitrogen peroxide so have the producers and purveyors of every other class of food. The laws prohibit the use of sulfurous acid and no longer can these use this in canned corn, asparagus, and celery, in dried fruits, raisins, beers, malts, breakfast foods, hops, wines, glucose, syrups, candies, etc. Who can then say what will be the effect of the combined dose of nitrates, nitro substitution products, etc. Do you want chemicals in everything that comes to your table. Not even the millers would think this proper for the use of their own families. But why not? If not harmful in one place is it in another?

## NORTH DAKOTA FLOUR TO THE FRONT

It is a well known fact the North Dakota produces one of the best milling wheats grown in any part of the United States; that for its bread making qualities it has no superior. While the state has a reputation for the wheats grown and the flours made in the large milling centers have been advertised as produced from North Dakota wheats or Northwestern spring wheats, the state has not received the credit justly due to it for the reason that often flours produced from other wheats have been admixed with that from North Dakota wheats until, at the present time, it is almost impossible to find upon the general markets of the East flours which are produced exclusively from wheat of this state, save in the small quantities manufactured by North Dakota mills.

Under the Food and Drug Law of the United States it now becomes necessary to label every product truthfully. No longer can they label their flours as produced from "Selected Northwestern wheat" or from "Dakota wheat" or "Hard spring Dakota wheat" unless it is actually produced from this product. This means that the labels of the large milling centers will have to be revised, and have already been largely changed to meet new conditions. North Dakota should take advantage of this opportunity and thru her local milling industries advertise her products and bring the standard of the flour produced to the high grade demanded; and in a few years North Dakota will become not only the great wheat producing state in the country, but the greatest flour producing section, noted for its superior product. To keep this high standard, two things are necessary.

First: The wheats grown by the farmers of the state must be carefully selected and kept free from any contamination of foreign weeds or mixed grains; and only those strains grown which produce flours of excellent quality. Here the miller and farmer should cooperate. Instead of antagonism between the milling interests of the state and the farming interests of the state, there should be the closest cooperation; and, probably, this can best be carried on thru the work of the Experiment Station.

Second: The mills of the state should strive to produce a product of superior quality, and maintain the high standard which should be set by the Miller's Association. They should establish a standard for patent flour, and then maintain the high standard set, and all other grades should be of like uniformity. Their products should then be advertised and sold for what they are; and when this is done North Dakota will become in reality the great wheat and



flour producing section of the country.

The milling interests of North Dakota are not the same as those of the Twin Cities or of the East, and instead of allying themselves with those interests they should establish a reputation of their own based upon the character of the products which they are able to produce in this state. They should cooperate with the farmers, and when a strain of wheat is found of superior milling quality, at least, some portion of it should be reserved for seed and exchange made with the farmers, in order to aid in keeping up the standard. The Experiment Station has been doing its part for several years in breeding and selecting seed, and with proper cooperation between all interests we may expect to see North Dakota come rapidly to the front.

### SHORT WEIGHT FRAUDS

For a number of years North Dakota was the only state that required that each and every product should be truthfully labeled with regard to the net weight and true grade of the product. Much opposition was encountered by manufacturers who desired to take advantage of the public and sell short weight products. This applied to all classes of food products; to canned goods as well as package goods; to crackers as well as to breakfast foods; to meats, fruits and dairy products.

It is, however, a satisfaction to see that other states are now giving attention to this matter. Nebraska has made a beginning in this direction by requiring the labeling of net weight on certain classes of goods. The Massachusetts Legislature is now considering a similar bill, and in this connection it will be interesting to know what is said by the Grocery World of Philadelphia in a recent issue, which runs as follows:

The Boston Retail Grocers' Association are waging a good fight. They are demanding of their Legislature a law branding all package goods with their net weight. Opposition is developing from wholesale grocers and manufacturers, on the ground of the extra trouble and expense involved.

To sell package goods unbranded of any weight is unquestionably profitable to manufacturers. Had it not been the National Biscuit Co. would not have withdrawn from a western State rather than put the net weight of its packages upon the labels. Some manufacturers sell a package as three pounds which is three pounds gross. This palpable fraud they excuse on the ground that they are following a custom of the trade, and that the consumer understands. Admittedly the practice has become so common as to be almost a custom of the trade, but assuredly the consumer does not understand.

Other manufacturers do not brand their packages with any weight whatever, but use packages that look to hold about a pound, tho really holding some ounces less. These manufacturers know perfectly well that buyers of such packages believe they are getting pounds or half-pounds, as the case may be. While technically clear of blame, they are nevertheless morally guilty of perpetrating a fraud upon the community.

It is an unanswerable proposition that the buyer of a package product is entitled to know, in advance of purchasing, what he is getting. And unless manufacturers realize that they have benefited thru fraud and are unwilling for that reason to relinquish it, the "Grocery World" cannot see that there can be any reason for not telling them.

### THE FALSE IDEA

The eternal conflict between right and wrong has been waged for all time and will probably last until man's ideas are changed to harmonize with that which is for the best. Too often we are misled by superficial appearances. We allow those having a wrong motive to shape public sentiment. This is clearly indicated at the present time in the case of food products where we are seeking absolute whiteness in a class of foods where it is well known that more or less of color is natural. Apples, pears and peaches are dried and bleached until the delicate flavor has been destroyed and they are as white as snow. Under such conditions there is always added an active ingredient which cannot be other than harmful even tho present in minute quantity. We notice the same tendency in the demand for an absolutely white bread until every product is stained or bleached to the same degree of color or absence of color, and in doing this the delicate flavor and satisfying quality of the bread is impaired. Who has not seen the chalk-white bread produced from such flour that was nearly as tasteless as chips themselves? Is there any satisfaction in the eating of such a product? Is it not wholly an artificial taste, unnecessary and undesirable? Is not the creamy yellow of the average flour more pleasing and satisfying than that of chalky inertness? Is it any wonder then that breakfast foods are so rapidly multiplying?

Slowly, step by step, those scheming interests desirous of profiting at the expense of the consuming public have gradually changed the tastes of the American people until they are willing to accept a product much inferior in food value and lacking in the characteristic qualities which have made for our American flour a high place in the markets of the world.

It is fortunate, however, that the people are beginning to realize that this kind of deception is not for their best interests, and again they are returning to the natural condition which will give them every product labeled true to name and devoid of any contaminating product which will tend to deceive and mislead and take away the nutritive and satisfying qualities of our staple food product.

### GRADING WHEAT

Considerable has been said with regard to the matter of the farmers getting the worst of it in the grading of wheat and the amount of dockage. Now, with regard to the matter of grade, it is particularly interesting to know what is being received and shipped out from the terminal elevators. Senator McCumber in a recent address before the Farmers & Grain Dealers Association of Iowa, stated that the amount of the receipts and shipments for the year ending Aug. 31, 1901 were:

	Receipts	Shipments
No. 1 Hard	341,576	1,000,438
No. 1 N.	10,070,464	16,900,917
No. 2 N.	7,341,594	3,978,311
No. 3 Spring	1,335,830	440,041
Rejected	256,063	134,471
No grade	1,335,521	344,823

This, certainly, is an interesting statement with regard to the improvement in the wheat as it passes thru the terminal elevators. As further emphasizing the necessity for uniformity of grading, he points to the Banker's Report for North Dakota at their meeting in Nov. 1906, and here is the report for three months for a single elevator. It reads as follows:

	Receipts bu.	Shipments bu.
No. 1 N.	99,711.40	196,288.30
No. 2 N.	141,455.10	467,704.00
No. 3 N.	272,047.20	213,459.30
No. 4 N.	201,267.20	None
No. grade	116,021.1	"
Rejected	59,742.3	"
Total	890,245.10	877,512.00
On hand (estimated)		12,733.1
Total		890,245.10

Senator McCumber further points out that this gave a profit in raising the grades for this single elevator for three months of \$83,720.69. In addition to this there was a profit from the screenings which sell at about \$8.00 per ton. Does this fairly represent the work of the terminal elevators? If so, is there not good reason why the farmers should continue to carry on their fight for national grain inspection?

**All Boys Interested in Corn Culture  
Contest Should Read Personal on Page 3.**



## Pure Food Department.

All Matters Pertaining to Foods will be Discussed in this Department

### THE NATIONAL PURE FOOD LAW

When the National Food Law went into effect it was hoped that the evils which have been practiced by unscrupulous manufacturers would soon be brought to an end; that the use of chemical preservatives, coloring matter, etc., which has enabled them to cover up their frauds, would be abolished and that only pure foods could be sold as such. It begins to look, however, as tho the pure food war must be fought all over again. The same class of manufacturers that fought the enactment of any law have placed every possible block in the way of its enforcement, and in this presidential year they seem to have impressed themselves upon the administration in such a way as to undo that which had been well done before.

Says What To Eat: "Was the year of grace, granted at the prayerful solicitation of a certain class of manufacturers to arrange their affairs so as to comply with the provisions of the Food Law, merely a subterfuge designed by illegitimate trade to give them time to organize into an unscrupulous and concerted opposition against pure food legislation with the object of tearing down all the good work that has been done toward protecting the consumer against food frauds?"

The efforts put forth by the administration thru the three secretaries seems to be to again cater to the wishes of the illegitimate manufacturers and to nullify the working effects of the Food Law. The Department of Agriculture first ruled against benzoid and sulfur dioxide in food products. Now, if sulfur dioxide is not a healthful constituent, it has no business in any food product. It is wholly unnecessary, and several of the states have had laws strictly prohibiting its use, and these laws have been enforced and there has been no trouble in the preservation of food products of any class. Yet, by a recent decision of the three secretaries of the Department, the whole work is nullified and the use of sulfur dioxide is again permissible in our foods. The experiments made by the Department at Washington clearly confirm the findings elsewhere that the use of sulfur dioxide is positively injurious to the health. Then, why should we longer tolerate its use? Why should we longer compromise with the dishonest manufacturer? Why are not the honest manufacturers half as active in the interests of pure food as are the scoundrels who have profited in the

past thru fraud and deception and injury to the public health?

Never were the food adulterators so active in Washington as they are reported at the present time; never were they exerting such influence, and, apparently, with the some degree of success in quarters where it would be least expected.

### GETTING A SQUARE DEAL

It is refreshing to see the wholesalers come but for something higher in business and the Pure Food Paw has helped to bring about this condition. Mr. J. W. Bragdon of Winstin Harper & Fisher said before the wholesalers:

"We are today upon an era of the 'square deal.' Evidence of this is everywhere. Up to within the memory of us all, only the man who was able to 'drive a hard bargain' got his just deserts.

"The merchant who was able to get the best of his customer by trickery or unfair methods, was considered shrewd and successful.

"The old idea of selling goods was to get just as much as you possibly could for everything sold. Short weights and short counts were considered shrewd merchandising.

"Today it is the one-priced, square dealing merchant, be he wholesaler or retailer who gains the good will and confidence of his patrons—the greatest element of success.

"I care not a shuck for a man's nationality, his politics or his religion, they are all the same to me, but the man who is 'on the square,' is the man I want to take by the hand, go thru life with as my friend. Nor can we stop with the individual or the corporation. Empires and Nations are today as never before on the basis of the square deal.

"One nation is influenced by the laws and actions of another nation, which have their effect on every citizen. A square dealing nation makes a square dealing citizen; a square dealing jobber tends to make a square dealing retailer, and in turn the influence of the square dealing retailer produces an effect upon the life of every patron with whom he comes in contact. We cannot too keenly realize the effect and importance of a square deal."

### SHALL WE HAVE WHAT WE PAY FOR

The North Dakota Food Law requires the net weight to be shown. Packers of

canned goods have repeatedly said that there was no necessity for requiring the net weight upon cans, or for requiring the true grade to be shown. It has been repeatedly pointed out, however, by the North Dakota Food Department that there was a difference in the net weight of the goods, and that the packers were obliged to use greater care since the passage of this law in North Dakota. It is a well-known fact that formerly the cans of tomatoes were sold as 3 lbs., and that these cans at times often contained less than two pounds. At the present time it is claimed that these are not intended to represent 3 lbs., but that this is the trade name, and the cans are simply sold according to size.

As showing the carelessness in filling such cans, and the wide variation in the pack of a single house, the Grocery World under date of March 20th gives the weight of 48 cans of the so-called 3 lbs. tomatoes put up by one house, ranging from 1 lb. and 8¾ oz., to 2 lbs. 5¾ oz., or, a difference of 14 oz. in the amount of material in the cans.

Shall we have what we pay for? Shall we enforce the law in North Dakota requiring the showing of the net weight and the true grade of the product on each and every container.

Manufacturers are trying to evade this feature of the law as would be clearly indicated by the character of the labels which they are at times using. There is no need for such variation as is indicated above, and the purchaser is

## WE MAKE CANDIES Of Merit and Quality. CONGRESS CANDY CO.,

GRAND FORKS, N. D.

WRITE FOR OUR  
Pure Food Grocery Catalog.  
FARMERS' SUPPLY HOUSE,  
Fargo, - - - North Dakota

**HONEY** Well ripened clover Honey for Sale, guaranteed absolutely pure and of the finest quality. One 30-lb. can 11½¢ per lb.; 2 or more cans 11¢; 12-lb. cans, in full cases of 72 lbs., 11¼¢ per lb. Send for price list. Address  
M. V. FACEY, Preston, Fillmore Co., Minn.

"Everhart's  
Candies are  
PURE."



cheated, and the manufacturer and producer is perpetrating a fraud that should not be tolerated by the public. Let us have what we are paying for and let the grade be true to name.

### BAD MILK

"We make the American baby a pensioner on a four-legged, board-faced animal, which may serve a very good brand of milk for a 150-pound calf, but which doesn't know anything about catering to a ten-pound baby."

The above statement was made by Dr. George Goler of Rochester, N. Y. in an address at Crawford, New Jersey. Continuing Dr. Goler said:

"The only way to make cow milk good for a human baby is to feed it to a human mother and let her system distill it for the baby. Physicians who are authorities on children's diseases tell us that not more than 25 per cent of mothers in affluent circumstances in the United States are today able to nurse their babies. The breast fed babies of the slums do better than the bottle-fed babies of the avenue.

"Out of 144 babies who died under the age of one year of whom I kept records, 22 were breast-fed and 122 bottle-fed. We are 80,000,000 people, including 10,000,000 children under five years of age. There is no other one thing on earth so important to those 10,000,000 children as milk. Are we doing about the most important thing in life for those 10,000,000 babies?

"They can't do anything for themselves, and they can't vote. A Rochester alderman said to me: 'I don't care a damn about the milk ordinance; babies can't vote.'

"I don't know a city in the world that has clean milk. I know a few that compel the sale of cold milk in summer. Nearly all cities sell milk from tuberculous cattle."

### THE POULTRY WE EAT

At times ignorance is bliss they say. Would we eat such stuff if we knew. Dr. Cavana says:

"After slaughter the poultry carcasses are denuded of their feathers and shipped to the wholesale dealers, without further dressing. The head and feet, as well as the full crop of partially digested grain, and the intestinal tract with its store of filthy and poisonous excrementitious matter, all combine to make valuable weight, and are therefore kept intact. Most of the modern wholesalers are proprietors of cold storage plants, and their stocks are the sources of supply for a great majority of the retail marketmen of our cities.

"Imagine the probabilities connected with the Thanksgiving turkey and the spring chicken (which is quoted upon the menu of our high class hotels and restaurants every day of the year), their previous storing in a cold, but unfrozen state for months, or even years; their crops stuffed with partially digested food in a state of continuous fermentation during this long period; their lung tissues and other delicate internal structures broken down by partial or complete decomposition; their digestive tracts filled with excrementitious matter in a state of solubility; their extensive anatomical arrangement for absorption thru the numerous vessels and ducts, which extend from the intestinal lining to various portions of the body of the fowl, rendering the absorption of the unclean and poisonous intestinal tract probable rather than possible; and the final crowning act of the wholesaler, that of saturating the partially mummified specimen in fresh water before marketing, thus rendering the distribution of the ptomaines thruout the unclean conglomeration as thoro as could be accomplished by the most stupid means."

### PRESERVATIVES IN CATSUP

The use of chemical preservatives, like benzoate of soda, in catsup enable unscrupulous manufacturers to make use of products which are wholly unfit to be used in the preparation of such catsups. This has been the contention of the North Dakota Food Department from the first inception of this work, and recently there was sent out a circular ruling against the use of benzoate of soda or other preservatives in catsups in the pack of 1908.

In reply to one of these circulars, Commissioner Ladd received a letter containing the following information from one of the large manufacturers of catsup:

"You will probably remember the writer's conversation with you at St. Paul on this preservative question, and later at other meetings, where we repeatedly protested against any action to prohibit the use of preservatives in goods such as ours. We felt at that time that it was impossible to pack satisfactory goods without the use of a preservative; that is, goods that would be both of satisfactory flavor and keeping quality, but we have been experimenting on this matter until we are now satisfied that we can put out goods that will keep from four to six weeks after the bottles are opened, (which in our opinion is as long as anyone should expect a vegetable food product to keep), and which are fully equal in flavor, if not superior, to the goods we formerly turned out with preservative."

This would certainly seem to indicate, that there would be no difficulty in supplying the trade with catsup free from preservatives and of satisfactory character. Quotations that have been made by manufacturers to jobbing houses, with regard to the cost of catsup containing no preservative, do not exceed 1½ cents per bottle. Who would not prefer to have a pure product and pay the extra 1½ cents?

### BLEACHED FLOURS

A Chicago correspondent in the Northwestern Miller states that:

"Some buyers have gone so far as to notify their mill connections that bleached flour would not be accepted, or contracted for, and that if attempt were made to apply it, further offers from the mills would not be entertained."

This would seem to indicate that, on the part of the consumer, bleached flour was not as popular as the mill men would have the public believe.

**YERXA**  
FARGO, N. D.

**"The Cash Grocer"**

We buy in large quantities for cash only, for our various stores and can save you money.

Big Store

Eig Stock

Big Sales

Small Profits

Cash

60  
CUPS FOR  
-15 CENTS-



**MEAD'S CEREAL BLEND**  
LOOKS LIKE COFFEE } BUT  
TASTES LIKE COFFEE } IS NOT  
SMELLS LIKE COFFEE } COFFEE.

Is a Scientific blend of the Choicest Rye Wheat and Barley Grown, no hulls, chicory or dope in it. Aids digestion and cures dyspepsia. Costs ¼ less than Mocha & Java—is 20 times better. A pound package post paid on receipt of 25 cents. Write for our three special offers. Ask your grocer for it first.

**MINNEAPOLIS CEREAL CO.,**

Coffee Dept.

Agents wanted everywhere.

Minneapolis, Minn.

U. S. SERIAL 712



## Pure Food Advertisers

The products advertised below are in compliance with the pure food law of North Dakota and of the highest grade.  
ASK YOUR GROCER FOR THEM.

“BUY”

“EAT”

**HOME**

**BRAND**

Pure Food Products

“ECONOMY”

“SATISFACTION”

**Griggs, Cooper & Co.**

MANUFACTURING  
WHOLESALE  
GROCERS,

ST. PAUL, MINN.

Main Offices:

CORNER THIRD AND BROADWAY

**GRAND PRIZE**

(The highest honor)

Awarded to

**DR. PRICE'S**  
DELICIOUS  
**Flavoring**  
**Extracts**

At the

ST. LOUIS  
EXPOSITION.

For sale by all representative grocers.

“FOR THOSE WHO CARE.”

**NOKOMIS CANNED GOODS**

ARE

Selected Fruits and Vegetables.

ABSOLUTELY PURE.

Packed with Greatest Care in Sanitary Cans.

**Stone-Ordean-Wells Company,**

WHOLESALE GROCERS.

DULUTH, MINN.

MINOT, N. D.

### RETAILERS PROTECTED

The National Food Law did not take effect until January 1st, 1907; and all goods on hand or receive by you prior to that time, are not affected in any manner by the National Food Law, and will not be, unless shipped from one state into another after the law goes into effect January 1st, 1907.

For your protection, it is necessary that you handle only pure goods, properly labeled within the meaning of this law and we, therefore, call your attention to the fact that food products sold to you by us are not adulterated or misbranded and are all guaranteed to conform to the requirements of all food laws, both State and National. This guarantee protects you from prosecutions under the National Food Law on any food products purchased from us hereafter.

REID, MURDOCH & Co.,

Chicago.

*Libby's*

**Food**  
**Products**

Canned Meats Pickles Olives  
Preserves etc.

Libby, McNeill & Libby.

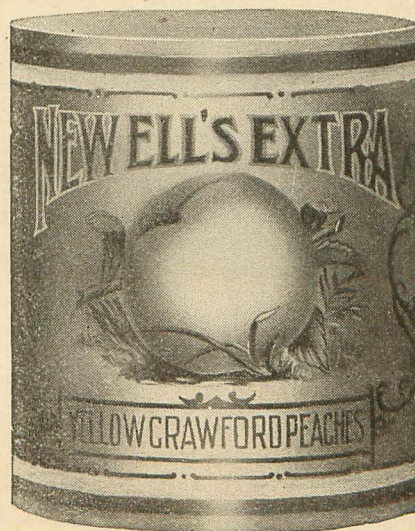
### NEWELL'S EXTRA LINE

Represents the highest quality of food products that can possibly be obtained. Purity and quantity always stand foremost.

**Geo. R. Newell & Co.,**

WHOLESALE GROCERS,

MINNEAPOLIS, - - - MINN.





# Shade Trees and Gardens.

C. B. Waldron, N. D. A. C., Editor.

## TREES! TREES!! TREES!!!

C. B. Waldron

(Continued from March Number.)

It is much easier to answer some parts of this question than the others. Taking up first the growing of timber for fuel it has been fairly well ascertained from trials in all of the northwestern states what trees are suited for this purpose, how long it takes them to mature and what the yield is per acre for any given time.

It is not our purpose in this paper to go into details as to the manner of planting trees for the different uses. These matters can be easily ascertained by those desiring to undertake the work. It is the intention merely to point out the known possibilities so one will know what to expect when he begins planting.

For profitable planting for fuel purposes one should select rapid-growing trees that endure shade well so they may be planted closely. Among the best trees for this purpose are the native poplar and the white or gray willow. These trees both grow readily from sprouts after being cut down so they do not require to be replanted after the first crop is cut.

The first crop may profitably be cut after fifteen or eighteen years growth. The yield will depend chiefly upon two things. First, the care the trees received while young in enabling them to get a good start and, second, the supply of moisture.

Under conditions not unusual both of these trees have been known to make a growth of five cords per acre per year or a yield of ninety cords per acre at the end of the eighteen year period. The value of the wood aside from the cost of cutting, would be not far from four dollars per cord at any point in North Dakota today and it is certain the price will never be less.

This would make the return from the land twenty dollars per acre yearly. To offset this would be the cost of planting in the beginning and also the cost of cultivating for this first four or five years. The planting and the care of an acre of timber for five years, counting first cost of trees and labor of men and teams at full value, is from twenty to twenty-five dollars or about a dollar and a quarter an acre for the eighteen year period. The returns from that expenditure, based upon actual measurements of timber growths in North Dakota and Minnesota may be as high as twenty dollars a year. They will also

be as much less, of course, as a dry, hard soil and lack of care may determine.

The figures given are applicable to practically all good agricultural lands and to all light soils having a good natural supply of moisture. The average quarter section farm has at least ten acres that could profitably be devoted to this purpose. With the returns only half of those shown to be possible, the income from the land would still be considerably in excess of what can be obtained from grain growing.

A part of the wood lot may well be devoted to the growing of timber for miscellaneous purposes, such as posts, poles, stakes, etc. Good clean strong poles from three to six inches in diameter and from twelve to twenty feet long have a multitude of uses upon a farm especially where diversified farming is practiced. Frames for machinery and feeding sheds, feeding racks, farmyards, enclosures as well as parts of various farm utensils and machinery can all be profitably supplied. White and native ash are the most promising trees to plant where strength is required. Planted thickly they make tall, straight trees and grow rather rapidly on moist cultivated soil. For long straight poles to be used in buildings the white willow will probably prove as satisfactory as any of the trees. For posts, diamond willow is much more desirable tho its growth is slower. The growing of trees for lumber is much more open to question than for the uses that we have considered. Naturally, no wide range experiments along that line have been consummated since this country was settled. The cottonwood is the only one of the trees artificially planted that has been made into lumber in this part of the country. The requirements of this tree in the way of light and moisture practically put it out of the list for general planting for lumber purposes. In certain spots having a natural water supply a few feet below the surface, it can doubtless be grown to advantage. On the drier soils especially when planted in groves it is pretty apt to die before attaining timber size. The question resolves itself into this: what trees, if any, can be profitably planted for lumber purposes in North Dakota?

Among the possible species are the white ash, green ash, basswood, bull pine, Norway pine and white elm. A plantation may be so managed that about forty of these longer lived and more valuable trees can be kept growing on each acre while the remainder of the

trees are cut for fuel posts and other uses. The question is often asked how old these trees must be before they reach lumber size. This will depend chiefly upon the moisture in the soil, ranging probably from thirty-five to fifty years. The green ash reaches maturity much earlier than the basswood or elm but, of course, makes a smaller tree.

What would these forty trees yield at the end of fifty years? Unfortunately, no figures are at hand that will answer this question, directly. They should saw at least two hundred feet to the tree of lumber worth ten dollars, even at present valuation. This would mean a return of \$400 for the fifty year period or eight dollars per acre yearly. Add to this the timber cut for fuel poles, etc. and the return is not to be considered unsatisfactory.

It rests for each land holder to determine how much of his land in the face of these figures, he can wisely devote to tree planting. This much is certain: In the face of existing conditions he cannot afford to longer ignore the matter entirely.

## FOR SALE

Russian Willow, Laurel-Leaved Willow, Cottonwood and Carolina Poplar Cuttings at \$2.50 per thousand. Pride of the North Seed Corn \$2.50 per bushel. Freight or Express. Bags and packing free.

Early Minnesota and Golden Bantain Sweet Corn per quart prepaid 40 cents.

## THE VOLIN NURSERY.

Volin, S. D.

**RAMBLER ROSE FREE**

**Our Big Four** Collection of Hardy Ever Blooming Roses: ETOIL DE LYON, deep golden yellow, vigorous; free bloomer; fragrant. CLOTHILDE SOUBERT, white shading to pink; profuse bloomer; wonderful for bedding or pot culture. CAPRICE; Pink striped with white and carmine; large, fragrant, very attractive. RICHMOND; New, brilliant crimson, long buds, magnificent flowers.

The four mailed for 25c and a Baby Rambler, crimson, hardy continual bloomer. Includes FREE with Catalog.

**BINGHAMTON SEED CO.**  
329 Court St., Binghamton, N. Y.

**A BIG GARDEN**

**For 12 cents, Postpaid.**

America's largest growers of flower, vegetable and farm seeds. In order to add 250,000 new customers to our list we offer for 12c, postpaid:

1 pkg. "Quick Quick" Carrot	10c
1 " Earliest Ripe Cabbage	10c
1 " Earliest Emerald Cucumber	15c
1 " La Crosse Market Lettuce	15c
1 " Early Diner Onion	10c
1 " Strawberry Muskmelon	15c
1 " 13 Day Radish	10c
1000 kernels gloriously beautiful flower seed	15c
<b>Total</b>	<b>\$1.00</b>

Above is sufficient seed to grow 35 bus. of rarest vegetables and thousands of brilliant flowers, and all is mailed to you postpaid for 12c; or if you send 10c, we will add a package of Berliner Earliest Canflower. Big catalog FREE. Most original seed and plant book published. Gladly mailed free to intending buyers.

**John A. Salzer Seed Co.**  
La Crosse, Wis.



forestry which will protect and preserve; and which will assure to us, the people, use of that supply intelligently and scientifically as it is required. There can be no two opinions as to this being the remedy, and if that is true, then the next logical step immediately following is to determine upon the areas and to place them without delay under national surveillance. The question is where to find these areas. The old areas of hard wood have become either entirely exhausted or so far exhausted as to be beyond dependence as a point of supply until several years of nourishing care have rejuvenated them—Copied from the February number of the Outing Magazine, by permission of its management.

#### COST OF ADULTERATED SEED

Much of the cheap seed sold on the market is adulterated, and every adulteration increases its cost. Often a slight lowering of the price accompanies a large increase in the adulteration. The lowering is done to undersell slightly the better seed. In some cases doubtless the adulterated seed is sold at the same price as the pure seed. There are many kinds of seeds that are adulterated, and one of these may serve as an illustration.

The agriculturists of Kansas have been investigating the matter and find that their alfalfa seed is costing them half a million dollars a year more than it would if the seed were pure. This is a high price to pay for adulterants in a single kind of seed. In 1905 the area seeded to alfalfa in Kansas was 602,560 acres. The cost of seeding this with alfalfa seed at 15 pounds to the acre and 16 cents per pound, all seeds being good, would have amounted to \$1,446,128, but at the rate at which adulterated seed was sold it is estimated that the cost must have been approximately \$1,935,042; or this would have been the cost for seeding the whole area to get a good stand. As a matter of fact, the farmers were many times deceived and got a small stand of alfalfa and a big stand of weeds. This greatly increased the cost to the farmers, for they lost the use of their land, the use of the crop that would have been grown on it and had to take extraordinary measures for cleaning their land of weeds introduced in the alfalfa seed. In some cases this would amount to the loss of the use of the land for a subsequent year.

Among the weed seeds introduced were trefoil, plantain, dodder, Russian thistle, crab grass, foxtail, burr clover and sweet clover. At the Kansas station it was estimated that if the seed

were pure the cost of seeding an acre of land would be \$2.40, while if an acre of land were fully seeded with some of the adulterated alfalfa on the market it would cost almost \$12, and the actual cost of the good seed in such a case would be almost \$50 per bushel. Of course this price is prohibitive.

An examination of the weed seeds in some of the samples showed that a man would put over four million weed seeds on his land to the acre. One lot of seed sufficient to seed an acre of land was closely examined and an approximation made of the number of weed seeds. There were 95,000 plantain seeds, 19,000 dodder seeds, 25,000 foxtail seeds and 28,000 of other weed seeds, making a total

of 167,000 per acre. The eradication of that number of weeds would mean a great deal of labor.

One lot of English blue grass supposed to be sufficient to sow an acre of land contained 142,230 seeds of crab grass, 111,000 seeds of dock, 393,670 seeds of smartweed, 62,340 seeds of cheat, together with 111,000 miscellaneous seeds, making a total of 820,240 weed seeds per acre. It was said that the crop harvested contained only about 15 per cent of English blue grass, while 79 per cent consisted of cheat. The other six per cent consisted of such weeds as bindweed, dock, foxtail and pigweed. Truly such seed is too expensive to buy, and no farmer could afford to use it if given to him.—Farmers' Review.

## HORTICULTURAL SOCIETY NOTES

O. O. Churchill, Secretary.

#### APPLES IN NORTH DAKOTA

Can apples be successfully grown in North Dakota? If they can it should be generally known, and if they can not that fact ought to be recognized as it would be useless to continue planting apple trees. Thousands of trees are being planted every year, and it would mean a serious loss if no benefit was to be derived therefrom. If the above question can be truthfully answered in the affirmative it should mean much to the state, but let us not be too hasty in drawing a final conclusion. Some controversy is being created as to what the final answer will be, which indicates that there is a difference of opinion and no doubt there are good reasons for the existence of contradictory views.

We know that many have failed in the past and it will be well to inquire into the causes of these failures. Some times as much may be learned from failures as from successes. Negative results, if properly understood, are of much value to the novice. If a person fails in a new enterprise, the cause of that failure should be known so that it may be avoided by others.

People too often have a preconceived opinion of what the results of an investigation will be and consequently merely endeavor to confirm their views. Sometimes the true state of affairs is purposely avoided. In other cases the judgment is biased by the preconceived opinion, and in either case it would be unwise to rely on the statements made, without, first giving them careful consideration.

#### There are Reasons for Hope

Only a few years ago it was claimed that clover could not be grown in North

Dakota. How this "fact" came to be so well known will probably forever remain a mystery now that as fine fields of clover can be found in the state as in any part of the Union. We know now why success was not more generally attained in the early days.

When the growing of apples under North Dakota conditions is better understood and has passed thru some such experience as clover has, may we not as confidently expect success. No doubt the greatest handicap has been the lack of suitable varieties. This condition still exists but not to nearly as great an extent as formerly. Provided that sufficient attention is given to the development of new varieties we may expect this difficulty to disappear. In this connection we may well profit by the experiences of our sister state on the east. Our present condition coincides with their pioneer experiences.

Clarence Wedge, a former president of the Minnesota State Horticultural Society has written, "In the evening of

**6 HANDSOME CLIMBERS 20¢**

Imperial Nasturtiums, 20 varieties imported seeds, novelties. Sweet Peas, 50 gay colors including Countess Spencer Hybrids. Gourds, 20 mixed ornamental sorts. Japan Morning Glory, enormous flowers, gorgeous colors. Cypress vine, scarlet and white. Cinnamon vine, pretty, hardy, cinnamon fragrance. This collection will cover 100 feet of fence or border with a showy tangle of flowers and foliage. With it we give free a package of the marvelous climber ECHINOCHLOA LOBATA and seeds of 25 herbs used in seasoning. Send two dimes or stamps today and ask for the \$45.00 Prize offer and 1908 catalog. Binghamton Seed Co., 329 Court St., Binghamton, N. Y.



We have not considered the many related questions of the influence of forests upon winds, soil, moisture, springs, streams, soil fertility, soil erosion, etc. These cannot be discussed now but it may be said in passing that forests are the great conservators of a country. They prevent waste and ultimate destruction by the agencies that are continually carrying the fertility out of our soil and even wasting the soil itself.

It is the history of nations that treeless countries move inevitably to destruction, thru all the successive steps of advancing poverty. We have no reason to suppose that ours would be any exception. Placed as we are amid virgin conditions it is hard for us to realize this. With a little thought and study it should not be hard and unless some account is taken of the situation the coming generations will have good and just cause to curse us for our stupidity and lack of forethought. It is also an undoubted fact that the average country is most productive in an agricultural way when at least a fourth of its area is devoted to forests the remaining three-fourths producing more than the whole area would without forests. Considering all these things it would seem that there is but one rational course open to us. We have seen that that course, while providing conditions only such as patriotism and the interest of the state as a whole would demand, can also be entered upon without loss to the individual but instead with probability of a substantial profit.

Our trees have gone or are going. We have hesitated long enough, have talked along enough. Let us plant.

#### A SERIOUS MATTER

##### This Means You

The average man seems to think that whether the trees live or die, is all one to him, so far as his personal interests are concerned. That is our self-centered American characteristic, and our national failing. We view our immediate and individual business in hand as the only trade thing in the world that can possibly concern us. We are so busy chasing the dollar in sight that we cannot see beyond our commercial nose ends. The fact is, that the forests are intimately associated with the material welfare of practically every industry and every business in the United States, and their preservation should therefore naturally be a matter of concern to every bread-winner in America.

In the first place the forests have a direct and tremendous influence upon agriculture, and, as I have already said and as you all know, the farming interests of America affect the entire country from banks to cobblers. The

forests are Nature's reservoirs. Whenever they have been cut away disastrous floods have followed as an annual visitation. From a manufacturing point of view the trees enter into the commercial health of a great many of our states, and touch intimately every industry employing wood. Exhaustion of the hard wood supply means the loss of these industries to the states in which they are at present located—since it stands to reason that such industries cannot exist when the supply of raw material has vanished.

How seriously America would feel the exhaustion of its hard wood timber is difficult to realize, especially since in times past the supply has been so ample that we have become accustomed to lavish use. Without hard wood for building purposes, for the manufacture of furniture, for railroad ties, for the manufacture of all kinds of vehicles, and for cooperage—not to speak of telephone and other poles, or of agricultural implements, we certainly should be in difficulties.

I am inclined to believe that failure of the hard wood supply would more seriously affect the industrial condition than a failure of crops, because crop failure at its worst would be an affliction of one or two years, whereas once the wood supply fails there is no restitution within a generation. Under existing conditions of protection we have, it is said, of hard wood lumber fit to cut, only about fifteen years' supply.

#### No Decrease in Demand or in Price

Of hard wood regions the Ohio Valley, once the center, has become substantially agricultural, while the Lake States—Wisconsin, Minnesota and Michigan—as well as the lower Mississippi Valley, are following rapidly the same direction. The perfectly plain situation is that the hard wood supply of this country is approaching a condition of exhaustion which would affect seriously, if not irreparably, the great industries which in turn would naturally influence the prosperity of America. With prospect of such a condition the wise man looks for a remedy. Some pretend to believe that the loss of hard wood is not so serious as it seems to be, that it

can be substituted by soft wood and by metal and by concrete. True, metal already has replaced hard wood to a very large extent in the manufacture of implements, furniture and cars, and even in the interior fittings of houses and offices; so also has concrete within the last few years, come into usage for structural purposes of many kinds. And yet it is an indisputable fact that altho these materials are so largely employed, they have not reduced either the demand or the cost of hard wood, which not only continues to be preferred for most former purposes, but has been put to a great many new uses.

Soft wood can scarcely replace hard wood because it has neither the strength nor the durability. Metals and concrete, will take the place of hard wood in many instances, and where they give better service at a less cost the exchange is a desirable one; but experience shows that the list is large and grows larger where hard wood cannot be replaced by any other material. If this is a fact (and what I am here stating can be substantiated either at the Agricultural Department or at any other source that will supply you with trustworthy figures), the wise thing is to look for a practicable solution. That is what a man would do in his individual business and that is what we all must do for this national subject which is our common business.

#### The Remedy

You have heard and believe that there is danger of exhausting our hard wood supply, and it is easy to appreciate that the one remedy, which is most effective, is also the simplest, viz., permanent maintenance of such areas of hard wood as we have remaining, under a system of

#### FOR SALE

Kubanka 5639; Swedish Select Oats 2788; Minnesota 25 Flax. Ship over Soo and G. N.

F. H. SQUIRE

Kenmare, - - - - N. D.

**FOR SALE**—Six-rowed Manchury seed barley. C. F. AMDON, Fargo, N. D.

# Seed Corn

North Dakota raised SEED CORN is scarce--order early. Write for our catalog of Millets, Seed Grains, Grass Seeds, etc.

FARGO SEED HOUSE, - - - Fargo, N. D.



Oct. 4, 1866, as the result of an especially encouraging exhibit of fruit made by our honored leader, J. S. Harris, at the state fair, this society was organized." "The list of apples that made up that exhibit has fortunately been preserved, and out of it only one, a Vermont seedling that received little notice at that time has proved of any permanent value. "With the exception of the Duchess and Tetofsky which shortly came into cultivation all our present excellent list of twenty-five varieties has since been evolved." "Even greater progress has been made in the development of varieties of plums, for not one of the many excellent varieties we now enjoy were known forty years ago." "While the development of other varieties of fruit has not been so great I believe it is safe to say that the varieties of today are nearly double in value those of that period."

Why may we not reasonably expect a recurrence of this experience in North Dakota? This result was secured by developing seedling fruit. The value to be derived from growing seedling apples was quite fully discussed in a previous number of this paper and it will not be necessary to make any repetition at this time.

#### Protection of Trees

It is a well known fact that certain varieties of apples have been grown successfully for many years in the more favored parts of the state. These sections are widely separated. In most cases natural protection is afforded either by a native growth of timber or by the conformation of the land. This is not always the case, however, for in many places not favored in either way apples may be found doing very well.

If the hardy varieties do well in places naturally protected, it would seem only reasonable to suppose that they would do equally well if given suitable artificial protection. Some may think this conclusion is not fully justifiable. If it is not true, we want to know it.

Good protection is the first and most important step. Unless the trees are sheltered during the fruiting period from the severe winds which are liable to blow, very little fruit will be left on the tree at harvest time. Groves should be planted on the south and west sides as the most destructive winds come from those directions during the summer months. The general opinion seems to be that no protection should be given on the north side, in the form of groves.

The location of the orchard is important. The soil and the protection to be given should be taken into consideration. Any soil adapted to the production of good corn crops will be found suitable.

#### Trees

Young, vigorous, trees, two or three years old should be planted. A young tree is cheaper to buy and easier to plant. Success is more sure with small trees than with large ones. The distance apart to plant the trees is a disputed question. Judging from the orchards that I have seen in the Northwest, rather close planting seems to be the best.

The best varieties for planting in North Dakota are: Hibernial, Pattens Greening, Charlamoff, Duchess, Wealthy, and Northwestern Greening. The degree of hardiness of the different varieties is in about the order given. The Hibernial is in all probability the most hardy. It would be better to select from several varieties rather than to plant only one.

#### Care of the Orchard

After the trees are planted they should be given careful cultivation for a few years. Many believe that the orchard should always be kept free from weeds and grass. Nevertheless some of the best and most productive orchards in the Northwest are growing in timothy sod. After the trees have made a good start the land is seeded down to timothy. Timothy is the best grass for this purpose as it does not produce a dense or heavy sod. This gives the orchard an unkept and ragged appearance, but it is apples that the producer is after. It might be advisable to use a small quantity of clover seed along with the timothy. The grass may be cut in the fall but it should not be removed.

It is claimed that when the orchard is treated in this way the danger from blight is greatly reduced. The wood seems to mature better in the fall and thus lessen the danger of freezing back in the winter. The labor is of course reduced when the land is seeded down.

The pruning knife should be used very sparingly. The old idea that it is necessary to cut and slash in order to make the trees bear is certainly wrong in North Dakota. The tree if allowed to form in its natural way will send its branches out close to the ground. This is desirable as it affords protection for the trunk of the tree and lessens the danger of the fruit being whipped off by the winds. The less trimming done the less it will be found necessary to do.

#### Protection from Rabbits

Many methods are practiced. Some fence the orchard with rabbit proof, woven wire fences. Others use protection for each individual tree, wire, burlap, or other material. Still others paint the trunks with a mixture of yellow ochre and fresh milk. It has been claimed that rabbits will not bother trees which have been rubbed with fresh meat rines late in the fall. Reports received indicate that this last method is not effective in all cases.

Lack of care afforded the trees after planting has been a very common cause of failure. It would be useless to plant out an orchard unless the care and attention is to be given which the work deserves. It should be remembered that some parts of the state are much better adapted to apple growing than others and that these localities may not be very widely separated. As the work progresses we can confidently look forward to the development of better varieties of all kinds of fruit for North Dakota, and the time when fruit growing will receive the attention which its importance demands. Enough small fruit can and should be grown on every farm to supply the needs of the family.

**High-Grade Flower Seeds.**  
**20 PACKAGES FOR 10c.**

Kind	Kind	Kind	Kind
Aster, 16	Poppy, 18	Portulaca, 20	
Pansy, 10	Candytuft, 10	Four O'clock, 13	
Phlox, 10	Sunflower, 2	Marigold, 10	
Sweet Peas, 12	Zinnia, 12	Petunia, 10	
Salvia, 2	Larkspur, 6	Sweet Alyssum, 10	
Balsam, 12	Verbena, 10	Nasturtium, 10	
Pinks, 10	Forget-me-not, 8	Calliopsis, 8	
	Sweet Mignonette.		

All of the above sent to any address, postpaid, for 10c. silver or six two-cent stamps. As a premium, and to introduce our seeds into every household, we will also send a **COLLECTION OF FINE, BEAUTIFUL BULBS FREE**—with catalogue.

**CEDAR NURSERY, WINTER HILL, Mass.**

**Save Tree Agent's Profits**

and get stock that will grow: **HARDY TREES AND PLANTS** adapted to the Northwest. We guarantee satisfaction. Send for our free catalog, containing valuable advice for planters and rare nursery bargains.

**A POSTAL WILL BRING IT.**

**STRAND'S NURSERY,**  
 Lock Box 14  
 Taylors Falls, Minn.

**When Ordering Any Kind of Garden or Field Seeds Write to the**  
**"GRAND FORKS SEED CO.,"**

Handlers of only Northrup, King & Co.'s Sterling Seeds. We buy Timothy, Millet, Flax, Barley, Speltz and Wheat.



# Home Affairs

Katherine C. Neilson, Editor

'Tis a fast to dole  
Thy sheaf of wheat  
And meat  
Unto the hungry soul,  
To show a heart grief—rent;  
To starve thy sin,  
Not bin;  
And that's to keep thy Lent."

A reasonable, seasonable fast, in commemoration of His holy passion, death, for forty days before Easter, makes us stronger and more perfect for future work. After the gay and busy season of winter, closing the Old Year, ushering in the New, ceasing the whirl of giddy pleasures—we are called to observe the first great rule of the creation "Order is Heaven's first Law." A great spiritual and moral lesson we are taught.

At this inclement season of the year, the breaking of the winter, the unpleasant changes call our attention to our homes, our exposures and our health. Changes in diet, sanitary conditions of the habitation and all pertaining to our betterment, morally and physically. In a shorter sentence it means stop, rest, ponder for a few days on the solemn affairs of yourselves, as the days begin to lengthen.

Easter always comes on the first Sunday after the full moon, after the 21st of March, or on the first Sunday after the 14th day of the calendar Moon which happens upon or next after the 21st of March according to the calendar rules. It is a church festival in memory of Christ's resurrection, corresponding to Pascha or Passover of the Jews.

The awakening, the resurrection, the life, when "the whole earth is full of His glory."

The first spring flowers arise from their dead leaves and ashes and resume life. The soft purple flower on our prairies called the corcus or goslin flower, on account of its downy cloak, is named Pasque Flower, from Pascha. Its root has medicinal properties. It is of the genus Anemone. You will see it in May generally—rarely before.

The Trailing Arbutus in New England was the gem of the Spring flowers, sheltered under pine needles and mosses.

Our musical songs of Indian legends in Hiawatha, sing of a native Easter, Wabun, the East Wind, which followed the caprices of Pau-Puk-Kee-Wis, the gambler, the Indian dandy.

"He ended his wild adventures, his gambling, dancing, and wooing of maidens, and in winter when the snow-flakes whirl in eddies round the lodges, when

the wind in gusty tumult o'er the smoke-flue, pipes and whistles.

"There," they cry, "Comes Pau-Puk-Kee-Wis" he is dancing thru the village he is gathering in his harvest. (gambing)

Then comes Seg-wan the spring. The young stranger.

"When I shake my flowing ringlets," said the young man, softly laughing, "Showers of rain fall warm and welcome, plants lift up their heads rejoicing, "Saw the earliest flower of spring time, Saw the Beauty of the springtime, Saw the Miskodeed in blossom."

The Miskodeed is the spring beauty (Claytonia Virginica).

Now is the time to look over the seed box for the garden and flower seeds. Sweet herbs were once considered important as condiments, have we lost our tastes for those delicious flavors? Their blending seems to have been a neglected art, not lost entirely, we hope.

Among the many herbs in the catalog are some we are using, savory and sage; thyme, used for soups and seasoning; tarragon, for perfuming vinegar; sweet fennel, has aromatic seeds; marjoram has a fine seasoning aroma; hyssop, carries aromas; lavender and rosemary, have a delightful fragrance, used to "lay away" in the linen chest or clothes closets; coriander and caraway seeds with other seeds, combine our pickle spices.

The blossoms of most of these herbs have attractive colors. Let us try a bed of herbs. We will have them fresh for use and can distinguish their properties, which are obsolete in the packages sold, for half of them are mere sticks pressed, and so old they are musty.

Then we may have a backyard to screen from public view. Recall some of the old delights round the kitchen door, 'way back at the old home.

Stately hollyhocks bloom all summer, if they are well protected thru the winter. In arranging for a screen, use tall varieties for a background and graduate the plants and colors down to phlox and petunias (which will defy the first frosts) candytuft and mignonette, then pansies.

In the graduation a thickly sown row of flax contrasts beautifully among the yellows and orange shades.

All have their favorite vegetables in the garden and a few salad plants are very desirable after lettuce has gone to seed. Cabbage and cauliflower have their good tastes, but Brussel's sprouts cap all of them for flavor.

Kohlrabi is equally as fine, better than turnips, has both the cabbage and turnip flavor. Sweet peppers are a great favorite now. The earliest varieties of all seeds are more reliable in our climate. After a trial of herbs, flowers and garden culture, let us hear thru the N. D. Farmer of their results.

## Egg Omelet (Splendid)

6 eggs, yolks and whites separated.

Beat the yolks, then add :

½pt of milk.

6 teaspoons of flour.

1 teaspoon of baking powder, salt.

Fold in the stiff beaten whites last and bake in rather quick oven.

## Curried Eggs

Boil eggs one-half hour, then the yolks are not heavy. Put them into cold water when done, until they are cool enough to peel smoothly.

Make a white sauce or a nice cream gravy. Season with salt, pepper and curry powder. Cut the eggs the long way. Place on a platter and dress with the sauce.

## Baked eggs

After frying bacon or ham, break the eggs into the frying pan, season and place in the oven until the whites are firm. You will notice they can be cut out, as they are quite thick.

Eggs broken into a granite iron pie plate, which has been well greased and dressed with 1 tablespoon of cream to each egg, and if baked slowly, is another way to bake eggs.

## Escalloped Eggs

Hard boiled eggs, cut rather fine, sprinkle a greased dish with fine bread crumbs. Alternate with crumbs and egg, salt and pepper, and cream sauce, crumbs on top; bake as you would macaroni and cheese.

## Horseradish Dressing

1 pt. grated horseradish.

2 tablespoons of sugar.

1 tablespoon of mustard.

Moisten the sugar and mustard with vinegar; add some thick cream, sour or sweet to the 'radish; beat it well, then mix together; make it as sweet as desired if the mixture needs more; this modifies the sting of the 'radish and can be used liberally.

Salad dressing thickened with horseradish is very much preferred to plain 'radish and vinegar.

**THERMOMETERS FOR FARMERS**, tested and guaranteed. Self registering Minimum. Registers 40 degress below to 120 degrees above zero. Hard wood backs. Eight-inch \$1.50; twelve-inch \$2.25 postpaid. Money back if not satisfied. **WILLOBANK FARM**

Larimore, N. D.

Hundreds are using Personal, page 3.



## AMONG OUR ADVERTISERS.

### SOLD CAUSTIC BALSAM TO SATISFIED CUSTOMERS

Please send me pictures of "famous horses." Have sold Gombault's Balsam for years to satisfied customers.—C. S. Burroughs, Jennings, Okla.

### BARLEY

Those who are seeking choice barley seed will do well to correspond with C. F. Amidon of Fargo. As regards the quality of the seed, it is enough that Mr. Amidon advertises it.

### SHORTHORNS

Among our new advertisers this month is James O'Hara, of Lanesboro, Minn., who offers a few choice animals of the Shorthorn breed. Mr. O'Hara is a successful stock raiser of Minnesota, and his animals are all standard bred.

### RED POLLS

W. B. Danforth of Little Cedar, Iowa offers some choice Red Polls this month. Mr. Danforth has many satisfied customers in North Dakota as well as in Iowa, where he has been for years a successful breeder of this class of stock.

### JERSEY BULL

Mr. Ebersole of Upham is giving an excellent opportunity to secure a high class Jersey Bull at a low price. It may be well to investigate before this animal is sold. His offer found elsewhere should interest Jersey stock fanciers, especially in the neighborhood of Upham, N. D.

### DURUM WHEAT, OATS AND FLAX

The attention of farmers is called to an article in this issue which strongly urges the seeding of Durum Wheat. The advertisement of Mr. Squires of Kenmare, mentions one of the two varieties of Durum Wheat best adapted to North Dakota conditions, especially outside the Red River Valley. His Swedish Oats and select Flax are said to be of the highest quality.

### METAL CULVERTS

So great was the demand for metal tiling last year that the North Dakota

Metal Culvert Co., of Fargo, were obliged to withdraw their advertisement as they could not possibly supply the demand. We heartily commend this North Dakota enterprise, and all who contemplate making use of culverts or drainage tiles will do well to order early.

### WHITE LEGHORNS

Fanciers of White Leghorns may rest assured that Mr. Babcock is to be relied upon to furnish pure-bred poultry, and it is not necessary to place "D. D." after his name, as inadvertently appeared last month. Mr. Babcock won first prize in both his entries at the Fargo Poultry Show. He has been breeding pure-bred poultry for 19 years.

### THAT SHORTHORN SALE

We cannot urge too strongly every progressive farmer in the state to read carefully the announcement in this issue of the Shorthorn Sale to be held this year at Valley City. If you are not stocking your farm with a few high grade cattle, you are certainly on the "wrong track." If you are satisfied with scrub stock, you're nearly "ditched."

### VALUE OF BEE CULTURE

Our readers will be interested in an article appearing this month by M. V. Facey on the practical value of bees on the farm. If Mr. Facey is as successful in awakening an interest among our readers in bee culture as he is in furnishing a high grade of honey, many a farm in this state will be dotted with the busy hives.

### CLOVER SEED

Frequently we are asked by correspondents to tell them where they can purchase grass seeds, especially clover, timothy and brome grass from farmers within the state. It is very rare that we are able to give such information. If some of the farmers who are growing seed to sell would advertise in the columns of the North Dakota Farmer, I am sure they would find a ready sale for such seed, and at the same time benefit their fellow farmers. If there is any farmer who has red clover seed, alsike clover and timothy seed to sell, he should write to Thomas Ely, Columbus, N. D., who is very anxious to se-

cure home-grown seed. Let our readers write us what they have to sell and we will see if we cannot get them in touch with their fellow farmers.

### NEW ENTERPRISE FOR VALLEY CITY

Prof. E. C. Hilborn of the Enderlin schools, is now connected with the organization of that new nursery company which is to make its home in Valley City. The promoters and stockholders, in the company are, Dr. E. A. Pray of Valley City, E. C. Hilborn of Enderlin, P. A. Pickett of Leal, and O. O. Wagley of Milwaukee. Mr. Hilborn is president and manager, Dr. Pray is vice president and treasurer and Mr. Pickett is secretary. The three officials constitute the board of directors. The company has an authorized capital of \$50,000.

Mr. Hilborn, for the past three years superintendent of the city schools at Enderlin, is not new to the nursery business, having had seven years of practical experience. For the past year he has been northwest superintendent of the Jewell Nursery Co., of Lake City, Minn. He is an energetic, level headed young man and will doubtless build up a big business.

The new company has not yet located either offices or farm. It is their intention to secure commodious offices and a desirable tract of land within the Sheyenne valley for an experimental farm and orchard. They will not only handle nursery stock, but they will handle their own stock—home-grown northern stock which will be adapted to the northwest.

The firm will be known as the Northwest Nursery Co., and will be ready for business at once. They have made arrangements to secure a stock supply from the Jewell Nursery until such time as their own stock is ready for the market. Orders can be placed with them as soon as their offices are opened. Traveling men will be put on the road and the company will work the entire northwest. The North Dakota Farmer welcomes this new enterprise and bespeaks a generous patronage from the farmers of the state.

### FREE

#### To School Directors.

To introduce the Rotary I will send free five copies each month for three months to any subscriber of the North Dakota Farmer. The Rotary is now read by 25,000 North Dakota children. Try it in your school.

Address, W. G. CROCKER,  
Lisbon, N. D.

All Boys Interested in Corn Culture Contest Should Read Personal on Page 3.



### THE COMING OF THE MODERN ROLLER-BEARING STEEL WAGON

Now for the first time the farmer is being offered an improvement in wagons similar to what he has long enjoyed in other lines of farm machinery.

For many years, for generations, there has been practically no change in wagons. The coming of the steel age worked wonders in implements and useful machines. But it made no change in the wagon. Strangely, this one piece of equipment that is used almost every day in the year is just as cumbrous and goes to rack just the same as it did in the days of our fathers and grandfathers.

The Davenport Roller Bearing Steel Wagon has come to change all this. To the Davenport Wagon Company, Davenport, Iowa, belongs the credit. They have spared no expense to work out a wagon that should fitly represent the steel age. The changes are radical all around. Their new steel roller-bearing wagon unquestionably is a vast improvement over the old wooden wagon. And best of all, this new steel wagon with all its improvements, advantages and freedom from repairs can be sold for just about the same price that the better grade of old style wooden wagons are selling for.

The new Davenport wagon has a steel gear, solidly assembled with hot rivets. There are no bolts to rattle or become loose. The wheels represent the greatest advance ever made in wheel making. It is what is known as a tension wheel, carrying the weight not alone on the spoke and part of tire below the hub, but on all parts alike. There is no "dish" to the wheel, it stands straight up with tires flat on the ground. Nor is there any "gather" on the new Davenport wheel, which does away with much of the old time friction and uneven pressure on bearings.

The hub with its enclosed and perfectly protected roller-bearings is perhaps the greatest improvement of all. The Davenport hub is practically a duplicate of the modern automobile hub. The reduced draft. The wagon requires oiling only at long intervals. The oiling is done without removing the wheels.

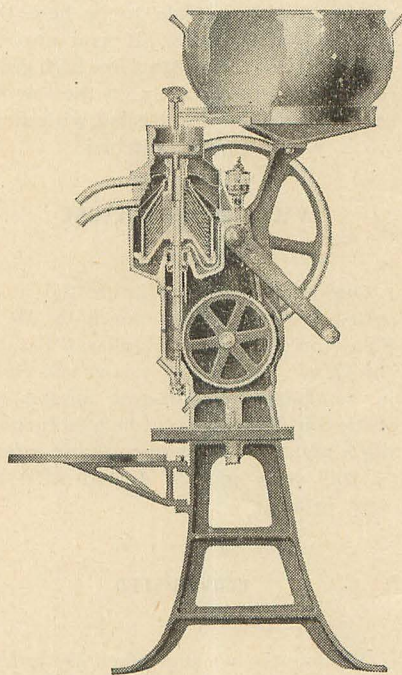
These are but suggestions of the radical differences between the new Davenport Steel Wagon and old style wagons. They are things that appeal to wagon buyers and users. We believe that everybody, particularly farmers, should know all about these great improvements before buying a new wagon. If you are in the market for a wagon make it a point to write the Davenport Wagon Company, Davenport, Iowa for Catalog

and copy of their booklet, "When the Going is Hard." Don't place your order until you have read them and know what the new steel roller-bearing wagon means for you. Kindly mention this notice when writing and the books will come promptly.

### IMPORTANT IMPROVEMENTS IN CREAM SEPARATORS

From the very general satisfaction derived from the use of the better class Cream Separators for some years it has seemed that the separator had reached the point of practical perfection

As a matter of fact, however, this wonderful implement, productive of so much profit and convenience to the dairy farmer, has from the very beginning, some twenty-five years ago, reached its remarkable development thru constant evolution from one stage of capacity, completeness of separation, lightness of running, durability, and general excellence into another, always quite in advance of the previous standard.



Hence it is a little less surprising than would otherwise be the case to note the many and novel changes found in the new 1908 De Laval machines, and still less so perhaps from the fact that the De Laval machines were first in the beginning and their makers have spared no effort or expense to maintain their position in the separator trade.

The changes begin with the supply can at the top and extend to the very lag screws in the base of the machine, and even include a change of color, which is now altered from the long familiar De

Laval blue to black because of the japanned finish being baked on, as with sewing machines, in very high temperature gas ovens, which renders impossible the retention of the blue color, the extreme heat turning blue into black.

The capacities are increased from ten to twenty per cent, while there is claimed to be a noticeable improvement in the still more complete separation of the butter-fat from the milk, particularly under the more difficult but frequently unavoidable circumstances of ordinary farm and dairy use.

The supply can is now low enough to meet the objection that has sometimes been made to the lifting of milk into it. It is spun from a single sheet of tin-plate, so that it is seamless and absolutely sanitary, while it is globe-shaped and thus avoids any splashing over of the milk.

A new feature which will appeal to every housewife is the drip shelf coming between the frame and the stool and catching all oil and overflow of milk and water, that would otherwise run to the floor.

Most ingenious is the fastening together of the frame, drip shelf and stool with but a single bolt, which enables the machine being made, shipped and handled in sections, and at same time makes one complete, solid whole of it when quickly put together with this one screw.

There are swinging and adjustable shelves for both cream and skim-milk receptacles in the smaller sizes of machines, and for the cream can alone where the machine is so large in capacity that the milk receptacle may better be set on the floor.

To the novice perhaps nothing is more impressive than the new design and general outline of the machines, the artistic scheme and graceful proportion of which are quite superior to anything before accomplished in separator building.

The new machines are the subject of much favorable comment by the Experiment Station and other authorities and are delighting many experienced users of separators, who are coming to appreciate some of the difficulties they have had to contend with before and some of the new features which it seems hard to be without once it is known that they can be had.

The accompanying sectional view of one of the machines illustrates some of the new features mentioned.

### CAUSTIC BALSAM A GOOD SELLER

Please send advertising matter of Gombault's Caustic Balsam. It is a good seller with us.—Palace Drug Store, Sayre, Okla.

See Personal on Page 3.



# Livestock Department

PROF. W. B. RICHARDS, Editor

## THAT FOOL ROOSTER CROWS AT THREE

By Rev. Gilbert Lard Wilson, Ph. B.

That fool rooster is a-crowin',  
When I'm sleepin' jist the best;  
Wish there was some way o' showin'  
Him t' shet his head an' rest;  
There's no need o' him a-yelpin';  
Three o'clock's too awful soon!  
Wish there was some way o' foolin'  
Him t' waken nearer noon.

He don't know about our summers,  
Up in North Dakota, see?  
Er he wouldn't think it daylight,  
Jist because it's light at three;  
There it goes ag'in! the sinner!

## THE FARGO SHORTHORN SALE OF JUNE 3

We wish to call our readers' attention to the announcement of the combination sale of registered Shorthorns to be held at Fargo, N. D., Wednesday, June 3, by the North Dakota breeders under the auspices of the North Dakota Live Stock Association.

A sale was also planned for by the breeders to be held at Minot on June 10th but this sale has been called off because the breeders could not consign enough cattle of desirable quality to warrant holding both sales. All the leading breeders of the state report that they have had an unusual demand this

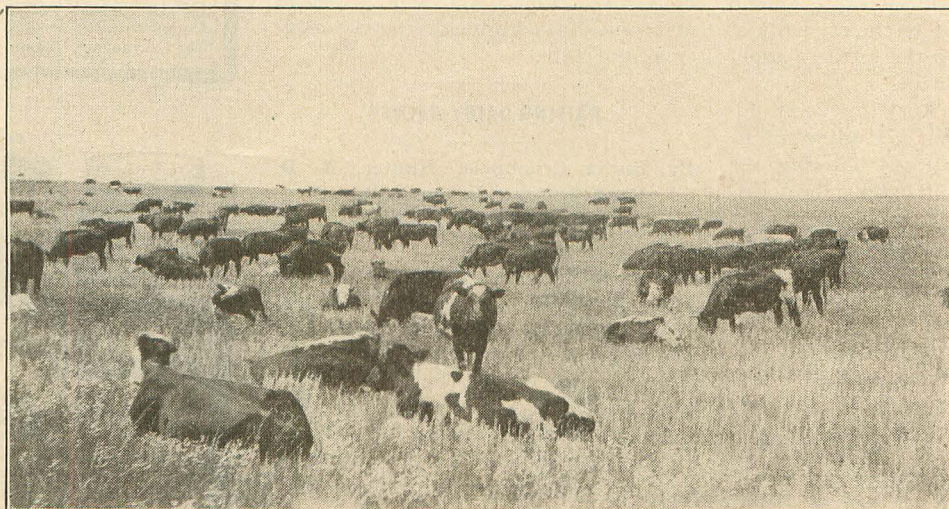
tween the buyers and sellers it will be adjusted to the satisfaction of both parties.

Prof. W. B. Richards, Secretary of the North Dakota Live Stock Association, Fargo, N. D., is acting as manager of the sale. Apply to him for a catalog.

## THE STUDENTS' JUDGING CONTEST AND MEAT DEMONSTRATION AT THE AGRICULTURAL COLLEGE

W. B. Richards

The work in animal husbandry at the North Dakota Agricultural College for the winter term of 1908 closed with the students' livestock judging contest and meat demonstration on March 18 and 19. The judging contest has been an annual feature since 1897 and the interest manifested in it is increasing each year.



Rich Grasses, Fat Cattle, Steady Income.

He's the worst fool in the coop;  
He must quit his cock-a-doodle,  
Er we'll have him in the soup.

Jist as I begin a sleepin'  
Like the fast mail down the grade,  
That fool rooster makes a racket,  
Jist the worst that's ever made;  
Spoils my dreams, an' makes me cranky,  
All the livelong day t' come;  
Gittin' waked so awful airly  
Makes me feel so awful bum.

There it goes again! I bet you  
We will have him in the soup;  
Wring his neck? well, now I reckon  
I will show him how to whoop!

\* \* \* \*

That you callin' me, Matilda?  
Thought it was that rooster crowed;  
"Eight o'clock?"—why don't you call me?

I'd got up, if I had knowed.  
Crowaview, near Mandan, N. D.

winter and as a result their sales have been beyond their expectation.

The cattle that will be sold at this sale will consist of consignments from the herds of the best breeders of the state. They are sired by such well known sires as Star of the North, Bapton Chief, Greenview Chief and First Choice and other sires of merit.

This is the seventh annual sale held by the breeders, and the continuance of the sales indicates that they have faith that this sale will be as well patronized by the farmers of the state as previous sales have been.

Those who are looking for some pure bred Shorthorns to start a herd with should not overlook this sale. The farmer who wishes to buy a bull for immediate service will also find it convenient to buy at this sale. These sales have acquired the reputation for being conducted strictly on the square in every respect, and if any difference arises be-

A meat demonstration has also been held at the close of the term for the benefit of the agricultural students of the college. This meat demonstration, however, has appealed to the girls taking the domestic science work and the ladies of Fargo and Moorhead who have been given an opportunity to attend. This year the services of John Gosling of Kansas City, Mo., who has the reputation of being the best demonstrator in this work in this country.

From the 175 students taking the subject of stock judging, consisting of students from all the different agricultural courses offered at the college, 18 students with highest grades were allowed to compete for the prizes offered. They were required to place one ring of each of the following classes of live stock: draft horses, beef cattle, dairy cattle, swine and sheep. The list of prizes competed for follow.



### Regular Prizes

1. A gold medal donated by the Board of Trustees to the student in the advanced class most proficient in judging all classes of live stock, but does not become the property of the student unless won a second time.

2. A silver cup is awarded to the student of the advanced class that wins second position in judging all classes. This cup is donated annually by Prof. Shepperd.

3. A silver cup donated by Prof. Richards awarded to the first year student most proficient in judging all classes of animals, which becomes the permanent property of the student on condition that it is won a second time.

### Special Prizes

1. A pure bred Poland China gilt donated by Mr. S. Fletcher, Matteson, N. D., awarded to the student in either class showing the greatest proficiency in judging beef cattle.

2. A pure bred Chester White gilt donated by the Division of Animal Husbandry awarded to the students of either class showing the greatest proficiency in judging swine.

3. A Plymouth Rock Cockerel donated by the Division of Poultry will be awarded to the student showing the greatest proficiency in judging dairy cattle.

4. A fob donated by the Zenner Disinfectant Co., will be awarded to the student showing the greatest proficiency in judging sheep.

### The Winners of 1908

The gold medal was won by John Dinwoodie, Bottineau, N. D., the winner of the Richards cup last year as a first year student. Mr. Dinwoodie is a member of the second year class of the farm husbandry course.

The Shepperd cup was won by Evan Hall, Elbowoods, N. D., a member of the junior class of the fourth year agricultural course.

The Richards cup was won by Chas. Ruyicka, Chicago, Ill., a member of the freshmen class of the fourth year agricultural course.

The Poland China gilt was won by Burke Critchfield, Hunter, N. D., a member of the junior class of the fourth year agricultural course.

The other three prizes were captured by J. M. Johnson of Glasston, N. D., a winter course student who took three terms work in the subject and as a result evidently mastered it sufficiently to win three of the prizes offered.

### The Meat Demonstration

This work proved to be highly interesting this year. Mr. Gosling discussed the animals that were slaughtered for the contest before the students prior to slaughtering them. This gave the student the opportunity to correlate the characteristics of the live animal on

the hoof with qualities of the carcasses after they were slaughtered. During the demonstration Mr. Gosling discussed the difference in quality of the flesh of the different animals how the same cuts from the different animals compared and the value of the respective cuts. He did not fail to bring out within the time allotted him those things that would be of value to the boys who are to rear the meat producing animals profitable and the kind most desired on the markets of this country, nor any point which would equip the housewife to buy meat more successfully.

The demonstration this year was held in the armory in order to have ample room to accommodate the crowd which promised to attend from past year's experience in holding it in the judging pavillion. The crowd was no disappointment, for over 400 people were in attendance, representing not only the agricultural students of the college, but students pursuing other courses. Many housewives from Fargo and Moorhead and some of the leading livestock breeders of the state.

### RAISING DAIRY CALVES

By Burke Critchfield, Hunter, N. D.  
Read before the Agricultural  
Club of the N. D. A. C.

The subject of properly feeding and managing dairy calves, is one that cannot be given too much consideration, if one wishes to perpetuate a dairy herd, whose members will be thrifty, and capable of highest production. Too little attention is generally given to this subject in this sections of the country and as a result, we find inferior herds throughout the state. It is not my aim in this paper, to lay down any fixed rules to govern the care, management, and feeding of the young dairy stock, but to give a general outline of the principles upon which successful results depend.

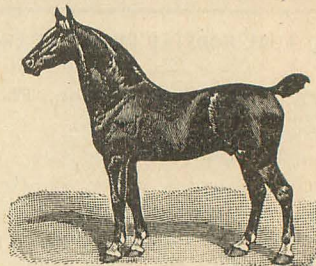
The adage, "As the twig is bent, so the tree inclines," can well be applied to raising dairy stock. An animal that is improperly and carelessly fed during its calfhood, coming into maturity with imperfect development of body and poor digestive system, will never made as economic a calf, as one that has had proper care and management during its early days.

Hence we see the need of giving the subject more attention.

In regard to managing a newly born calf, there is a conflict of opinion as to whether it is best to separate the calf and cow immediately or let it suckle her for the first two meals, or to let it run with its dam for the first week or ten days. In my estimation, however, the second method is preferable; first because here the calf gets the colostrum at the cor-

Warranted to Give Satisfaction.

## Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for  
Curb, Splint, Sweeny, Capped Hock,  
Strained Tendons, Founder, Wind  
Puffs, and all lameness from Spavin,  
Ringbone and other bony tumors.  
Cures all skin diseases or Parasites,  
Thrush, Diphtheria. Removes all  
Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism,  
Sprains, Sore Throat, etc., it is invaluable.  
Every bottle of Caustic Balsam sold is  
warranted to give satisfaction. Price \$1.50  
per bottle. Sold by druggists, or sent by ex-  
press, charges paid, with full directions for  
its use. Send for descriptive circulars,  
testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.



## Health for the Horse

Loosen up his hide and his intestinal  
system, purify his blood, drive out the worms,  
give him an appetite and power to digest and  
get the full value of all his feed. You can  
do all this by the systematic use of

## PRUSSIAN HORSE TONIC

and have your horses strong, healthy and  
high strung. Mix with feed. Only a small  
quantity required. 1,200 measures in the big  
pail. Price only \$3.50 prepaid.

Ask your dealer for the standard remedies,

Prussian Spavin Remedy  
Prussian Heave Powders  
Prussian Worm Powders  
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Write us what stock you own and we will  
send you our Horseman's Hand Book Free.  
Write today.

PRUSSIAN REMEDY CO.  
St. Paul, Minn.

## ABSORBINE

**Removes Bursal Enlargements,  
Thickened Tissues, Infiltrated  
Parts, and any Puff or Swelling.  
Cures Lameness, Allays Pain**  
without laying the horse up. Does not  
blister, stain or remove the hair. \$2.00 a  
bottle, delivered. Pamphlet 1-C free.

**ABSORBINE, JR., for mankind, \$1.00  
bottle. Cures Synovitis, Weeping Sinus,  
Strains, Gouty or Rheumatic Deposits,  
reduces Varicose Veins, Varicocele, Hydrocele.  
Allays pain. Book free. Genuine mfd. only by**  
W. F. YOUNG, P.D.F., 233 Monmouth St., Springfield, Mass.



rect temperature, which is most essential in giving the digestive system a healthy start, and secondly because the calf will learn to drink as readily as if it had not suckled at all. The objection to the last mentioned method is that it is hard to teach the calf to drink after it has got the sucking habit and you generally give them a setback by starving them to it. There is no doubt, however, but that much could be said in favor of either of the methods.

When you have separated the calf and it is hungry you should give it some of its mother's milk. Don't milk it out and let it stand around for a half hour or so until it is cold, but feed it at once. It is better to feed rather frequently for a few days, perhaps three or four times per day; but it can soon be accustomed to regular feeding morning and evening.

As to the amount to be given six or eight pounds of its mother's milk is a great sufficiency for the first two weeks. You can then safely increase the amount according to your judgment as to the calf's ability. But never make the mistake of overfeeding. This is the common cause of most of our calf troubles.

Now that the calf has learned to drink alone, feed it regularly. Don't feed at six o'clock one morning and at ten the next, but have regular feeding hours if you wish your animals to thrive. For the first two weeks you had better give

the whole milk as it comes from the cow. At the end of that time you can commence substituting a half pound of freshly separated milk for the same amount of whole milk. Increase the amount of separated milk every meal until you are giving an entire ration of skim milk. If you cannot separate immediately after milk you should warm the milk to a temperature of at least 80 or 90 degrees F. By the time the calf is three weeks old it should be able to take all skim milk and the amount could be increased. This however, should be gradual. Make it by giving half a pound more per day until the desired amount is reached.

From the beginning you can keep a little box of ground feed in reach of the animals, and at this age they should be accustomed to eating a little every meal. Finely ground oats, bran, and small quantity of ground corn make a very good mixed feed for them. Always keep plenty of good clean hay within reach, so that they will learn to chew the cud of contentment at an early age.

Our aim is to develop a large stomach capacity and this feeding of bulky foods, which at the same time will build up bone and tissue is the only means for that end.

Always practise giving a little salt in the ground feed. It not only is an ap-

petizer, but is essential to the system as well.

When you have increased the milk to twelve or sixteen pounds, you have reached the maximum amount the calf should receive, and the animals are probably six or eight weeks old. They should be getting a regular grain feed and plenty of hay and water. Now you can gradually decrease your milk feed and give more grain, or if pastures are handy, they are preferable.

From now on the management becomes simpler. As long as you have milk to spare, feed it with your pasture and grain. When your calves have become accustomed to pasture the grain can be taken away gradually and they will thrive as well. But if your pastures are poor, feed a little grain. It never pays to let the growth and development be retarded by lack of proper food.

Wintering these calves is simple if they are thrifty. A little grain with plenty of hay and water will bring them thru in a thriving condition if they have plenty of exercise, and clean, well-ventilated sleeping places. During the winter they should have all the roughage they will consume.

In caring for your calves there are several things to be remembered. Keep them in a light, well ventilated and roomy stall, which always has an abundance of good bedding. Always keep the pens clean, if you do not want

THE SEVENTH ANNUAL COMBINATION SALE OF

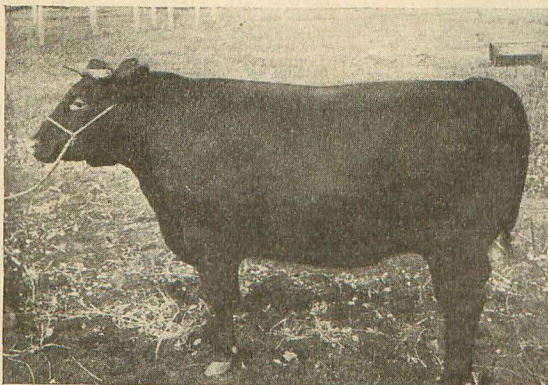
# Registered Shorthorns

OF THE NORTH DAKOTA BREEDERS

Will take place in FARGO, N. D. ON WEDNESDAY, JUNE 3, 1908

Under the auspices of

THE NORTH DAKOTA LIVE STOCK ASSOCIATION



The breeders have again this year consigned a good useful lot of cattle as in past years, and they expect to render the buyer the same opportunity to purchase good clean cattle that are guaranteed to be right in every respect. This kind of sales is what has made it possible to hold them seven years in succession. Every sale has been a success both to the buyer and the seller as well.

These are the sales where the cattle are sold guaranteed to be free from tuberculosis.

These cattle are bred right, built right, and their health is guaranteed to be right.

Write for catalog to

W. B. RICHARDS, Sec'y.,

N. D. Live Stock Association,

Agricultural College, N. D.

Auctioneers:

Col. R. W. Barclay, Mason City, Iowa.

Col. Frank H. Hyland, Devils Lake, N. D.



to have your calves lousy or troubled with various skin troubles which are caused by nothing else than filth and uncleanliness. Feed in pails only which you can always wash clean after feeding. Don't leave any milk in the corners for disease germs to hatch in and cause you trouble. Nothing is of more importance than keeping your feeding utensils clean and too much cannot be said on this point. It is advisable to provide little stalls and stanchions where you can fasten the calves during meal time and for a short time afterwards. Then they won't be as liable to get that filthy habit of sucking each other.

In summing up these points we find the essentials to be these: first, do not overfeed. Overfeeding is the cause of most of our calf disorders, altho few people seem to understand this. Second, be regular, both as to time and amount, always making changes gradual. Third: keep your feeding pails clean, your pens well aired, light and clean. A good white washing twice a year is very necessary to disinfect the stable. Fourth, always keep in mind what you are feeding for. If these things are observed there is no question but what you will succeed.

#### FEED FOR HOGS

The entire farm, or as much of it as possible, should be fenced for hogs. Three pounds of clover seed per acre sown with the small grain crop will afford an abundance of good feed on the stubble fields after harvest at a merely nominal cost. The utilization of this feed for grazing hogs or sheep often affords more profit than the crop of grain.

As high as \$10 per acre has been obtained by Iowa farmers from the rape and clover aftermath, following the crop of small grain in the manner indicated. This crop is equally valuable for finishing hogs or growing pigs.

An acre of alfalfa is even more valuable than an acre of rape for grazing hogs, tho it can not be grown as a catch crop for a single season. The principle which I wish to emphasize in feeding hogs is that, in order to insure the best health, vigor, redundancy and profit in hog raising, the herd should be handled as largely as possible in the open field and pasture, and that during a period of six to seven months of the year alfalfa, clover, rape and other forage crops should constitute an important adjunct to the grain ration.

#### EXPERIENCE IN BREEDING DRAFT HORSES

The Farmers' Advocate, London, Ont., publishes a prize article on Breeding Draft Horses, Practical Experience

on the Farm Breeding Grades, valuable experience in success and in mistakes by Mr. J. P. Nunan, Ontario.

Our experience in breeding horses began about thirty-five years ago, and has consisted of raising about from one to four, and averaging about two colts per year—this as one branch of a very mixed system of farming on a hundred-and-fifty-acre farm, the mares doing their share of the work thereon.

The start was made with a pair of half-bred Percheron mares, sixteen hands high, weighing about 14 cwt., and sound. We have the same stock today. For some years we used sires of the same breed and type, until the colts had three top crosses of the breed. This gave us a very uniform lot of gray and black colts, weighing from 1,350 to 1,500 pounds. I remember three years in which we raised ten of these colts that would make five teams matched in height, weight, color and, what is better, and harder to get, disposition. But not being in a position to keep many horses, we sold them young, and so missed the profit we might have had in selling them as matched teams.

Then, for some years, a suitable Percheron not being available, we used Clydes as sires, and from this cross we got some grand individuals and some poor ones. They lacked uniformity, weighing from 1,300 to 1,650 pounds, and stood from 15 to 17 hands high. This indifferent result was thru no fault of the sires, remember, but because we were breeding out of line and mixing types—a bad error in breeding heavy horses.

We used coach and carriage sires a

few times, with about the same result, with this difference, that our misfits, being lacking in weight, were not worth near the money that heavier horses were, even tho lacking in quality. This is the great advantage to the ordinary farmer in breeding heavy horses, for, even if slightly blemished, they are always worth a fair price for the work there is in them. We also bred two of these mares to a Suffolk Punch, with good results, I suppose on account of the types being more alike, but we did not continue it long enough to be sure.

We had a nice carriage mare once that had navicular lameness, and we raised three nice carriage colts from her. This was a mistake, as two of them developed the same trouble, and the third we sold to a dealer, and she went to Boston as one of a nine-hundred-dollar pair. I hope the man who got them was rich enough to replace her without feeling the outlay. Mare or horse with this trouble should never be bred, for, while it may not be exactly hereditary, the weakness is there, and the least thing acts as an exciting cause.

#### Registered Red Polled Cattle

Young stock of both sexes for sale  
C. G. FAIT & SON, MONANGO, N. D.

#### AUCTIONEER

#### PEDIGREED LIVE STOCK AND LARGE FARM SALES.

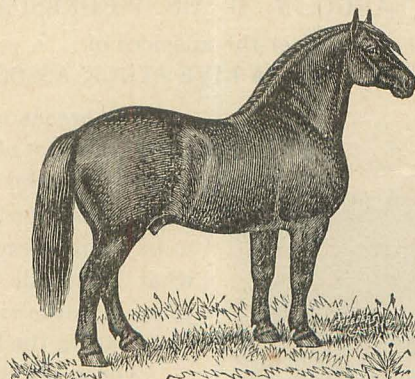
REFERENCE: Any pure blood breeder in the Northwest.

Graduate National College of Auctioneers.

FRANK H. HYLAND,

Devils Lake. - - - - - North Dakota

## PERCHERON HORSES



We offer the best lot of colts we have ever raised, most of them coming 2 and 3 years old. Our old mares are nearly all granddaughters of Brilliant (755) 1271, and these colts are sired by Chasseau, a stallion of great merit, weighing 2100 pounds. A few mares in foal. Can furnish stallions and mares not related. We sell on time for good paper. Established 1891.

At Fargo we won first in every class we showed in, except one, with stock we bred on our farm. We also won sweepstake on a two-year-old mare that we bred and raised.

**WHITE BROTHERS, Valley City, N. D.**

W. WHITE

M. W. WHITE



During the time covered by this experience, we have sold our young stock at about the following prices: Yearlings, \$80; two-year olds, \$120, and others from this up to \$200.

We have certainly found it a very profitable branch of mixed farming, as the colts can earn their living after two and one-half years old, and be the better for it; and the brood mares are the better for earning theirs, if you are careful with them when pregnant. Avoid much backing up and plunging thru snow-drifts, and don't let them drink too much ice-water. We never had but one case of abortion, and that was from this cause, the mare being warm at the time. I remember two years in which we raised eight colts from four mares, and did all the work on our hundred and fifty acres with these same mares and one other work horse. Of course, you have to do a little managing, such as having your plowing all done in the fall, your manure out in winter, etc.

We like our colts to come early—the earlier the better; we always had better success with them than late ones, and this has been the experience of most breeders of my acquaintance. One would be inclined to think it would be better if the mares, had a run on grass before foaling, but our experience has been the reverse. We lost four colts by their not being able to pass the dark stuff contained in the bowels at birth, and they were all late ones. I may add that now we always use a syringe to help the colt get rid of this, whether he really needs it or not; we think it better. We have lost four colts with joint-evil, and three of them were late colts, also. I wish I knew how to guard against this trouble, but I don't. Treating the naval cord may help, but in one of the cases I treated the cord when I cut it, and carefully afterwards, but the colt died of the trouble when three weeks old.

We have always tried to be present when our mares foaled, but must say we have had very good success when the mares were unattended, altho we would have lost one valuable young mare if we had not been there. The colt was a malformation, and required a veterinary and his instruments; but this the only serious trouble we ever had at foaling time. I may say that we have always called a veterinarian when anything serious was wrong, and found it paid. All the cases I have mentioned have been such treatment.

When working the mares, the colts are better shut in a loose box than following around the field. Darken the box when the flies are bad; keep hay and water where they can take it at will, and as soon as they will eat them, feed a little bran and whole oats. In a few cases, where the mares were working hard,

U S U

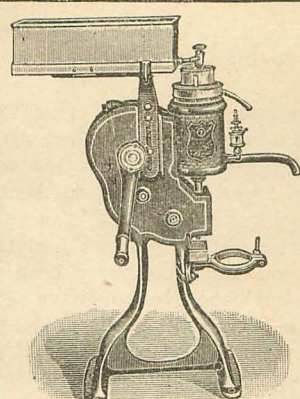
**FOR 16 YEARS THE BEST!**

**STILL BETTER**

**IN 1908**

**UNITED STATES**

**Cream Separators.**



The United States has always, since its introduction, separated more cream from the milk, and has done it more thoroughly and quickly than any other separator. The figures of the public national and international tests demonstrate this.

**THE 1908 MODELS HAVE IMPROVEMENTS**

which make the handling of milk still easier, quicker and more profitable. They do their work more efficiently, more economically than any other, and are built to wear. In spite of the fact that the demand is greater than ever before, and that dairymen everywhere are exchanging other makes for the reliable and efficient United States, the standard separator, we are prepared to make prompt deliveries anywhere.

Write to-day for "Catalogue No. 127 and any desired particulars  
**VERMONT FARM MACHINE CO., Bellows Falls, Vt.**  
 Distributing warehouses at: Chicago, Ill., La Crosse, Wis., Minneapolis, Minn., Kansas City, Mo., Omaha, Neb., Toledo, O., Salt Lake City, Utah, Denver, Colo., San Francisco, Cal., Spokane, Wash., Portland, Ore., Buffalo, N. Y., Auburn, Me., Montreal and Sherbrooke, Quebec, Winnipeg, Man., Hamilton, Ont., Calgary, Alta.

490

U S U S U S U S

## Bosard Farming Company.

### JERSEYS AND BERKSHIRES. STANDARDS OF EXCELLENCE.

**IN SERVICE:**  
 Lottie Melia Ann's  
 King. Several sons  
 of this bull for sale.

Other registered bulls  
 for sale.

**IN SERVICE:**  
**CHARMER LONG-  
 FELLOW 2nd.**  
 Registered sons and  
 daughters of this  
 boar for sale.

**SIRE:** Melia Ann's King, the Famous \$15,000 bull.

**DAM:** Lottie Melia Ann, the cow with a record of 20 lbs., 2 oz. butter in seven days, 9250 lbs. milk in one year, 23120 lbs. milk in three years and dam of three tested daughters in the charm list.

**SIRE:** Premier Longfellow, the World's Grand Champion Boar.

**DAM:** Lee's Charmer Belle 3rd. No. 92797.

For pedigrees and information of these pure bred cattle and hogs write:

### BOSARD FARMING COMPANY,

WARREN,

MINNESOTA

#### MAPLE GROVE RED POLLS

A few choice calves for sale from a well established herd. Address

W. B. DANFORTH,  
 Little Cedar, Iowa.

#### REGISTERED JERSEY BULL

Pedro's Emperor 72039. St. Lambert, dropped Sept. 1902.

Took 1st premium at N. D. State Fair '03, '04, '05. Riota Empress, his mother produced over 5000 lbs. milk with 1st calf.

Will sell cheap on account of being closely related to our herd.

W. E. & J. P. EBERSOLE  
 Upham, N. D.



and their milk low, we have given them cow's milk, with good results; they soon learn to drink even skim milk, just like a calf.

The first winter is the critical time in a colt's life. I suppose there are many things good to feed them, but we have never found anything to beat good clover hay, with a little bran and oats, and water often. If you feed timothy hay, you must feed more bran to balance, but, whatever roughage you feed, be sure it is good, for the colt's stomach is very small, and will not hold enough food stuff to properly nourish the growing body.

Some of the things we have learned are the following:

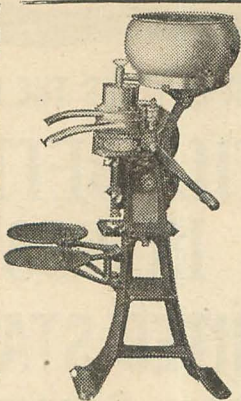
If you want a good safe brood mare, breed her young, and don't expect to raise a good horse from a broken-down and worn-out mare, as she cannot transmit what she has not got—that is, the stamina and vigor necessary for a good horse.

Try to stick to the type you have, unless it is bad, and you want to change altogether; then, buy a good sound mare or two and start fresh; it is surer and cheaper.

In choosing a sire, even if you know there is a better horse in the neighborhood, still stick to your type.

Don't quarrel with your neighbor about the merits of the different breeds. You might as well run down a man's wife as his favorite breed of horses. Any of the heavy breeds are good enough, provided you aim at the best type of that breed, but if you like one better, that is the one for you to breed.

I have been much interested in reading the articles in "The Farmer's Advocate" and elsewhere on the subject of improving the type of horses; also the report of the Government Commission to the same end, but it would seem to me that too much attention is given to the sire, and not enough to the mare. If the type of heavy horses in Ontario, or parts of it, at least, has not improved as it should, we, as farmers, are largely to blame ourselves. When we want a brood sow, we pick the best out of twenty or thirty, and send the rest to the butcher, and see how soon we have the bacon hog; we do the same every year with our ewe lambs, and the effect is evident wherever Ontario sheep meet others. We do the same with our heifers, and the cow-testing association tells how the yield of butter-fat is jumping up. But if we have a pair of good heavy young mares, and a buyer comes along and offers us \$400 for them, away they go, to spend their lives drawing a dray in some city, and we go on breeding from some blemished or broken-down mother worth about \$50. It is a very common thing to hear a farmer say, when buying a work horse, "I would



## TEN YEARS AHEAD OF ALL OTHER CREAM SEPARATORS

In skimming efficiency, simplicity, durability and convenience, the new 1908 improved De Laval Cream Separators are fully ten years ahead of any other machine on the market today. Thirty years of experience, protecting patents, and the many valuable improvements devised and perfected by the De Laval engineers in all parts of the world during the past three years, are responsible for this fact. Every feature of the De Laval has been improved, from the supply can to the base. The new centre-balanced bowl with its separate spindle is alone a triumph in separator construction and must be seen to be fully appreciated. Then, there is the new one-piece "anti-splash" sanitary supply can, adjustable shelves for skim-milk and cream receptacles, new frame designs, and many other but less important improvements,—all combining to make the De Laval as nearly ideal as a separator for farm and dairy use can be made. There is the proper size machine for every size dairy from the smallest to the largest and no cow owner can afford to be without one of these improved machines. It will cost you nothing to see and examine the new De Laval and right at your own home too, if you will but say the word. Our new illustrated catalog describing the De Laval improvements in detail is sent for the asking. Write us at once and you will receive this interesting book by first mail with full information as to how you may have a free demonstration of the De Laval in your home. It will pay you, and your only regret will be that you didn't investigate sooner.

### THE DE LAVAL SEPARATOR CO.

RANDOLPH & CANAL STS.  
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### WILLOW GLEN SHORTHORNS AND POLAND CHINAS.

#### HOME OF MINN. KEEP ON

He was first premium at Minnesota State Fair 1907. Have a few choice gilts for sale weighing 250 lbs. Bred to Minn. Keep On, at prices that will move them. We are building up as good a herd as can be found in the northwest.

Also have good bulls at right prices for sale.

R. F. D. 3., White Rock, S. D.

AXEL W. PETERSON,

### ENVILLA STOCK FARM, COGSWELL, N. D.,

200 HEAD REGISTERED ANGUS CATTLE—Calves, yearlings, bulls and cows of the best breeding and lowest prices.

150 SHETLAND PONIES AND GRADES—Any color, size or weight.

300 ANGORA GOATS—Kids, billies and nannies.

250 REGISTERED HOGS—Duroc Jersey, Improved Yorkshire, Hampshire, Improved Chester White and Poland China. Bred gilts and young pigs.

5000 HEAD POULTRY—All varieties: Rocks, Wyandottes, Leghorns, Reds, Brahmas, Orpingtons, Houdans, Minorcas, Games, Javas, Hamburgs and Bantams.

GESE—Toulouse, Embden, Buff, Chinese, African and Canadian-wild.

TURKEYS—Mammoth Bronze, White Holland and Buff.

DUCKS—Pekin, Muscovy, Wild Mallard, Indian Runner and Rouen.

PEA FOWLS, PHEASANTS, PEARL AND WHITE GUINEAS, FANTAIL PIGEONS—Birds and eggs from above varieties. Some choice cockerels. Baby chicks one day old.

RABBITS, HARES, GUINEA PIGS, SQUIRRELS, COONS, ANGORA CATS, WOLF, FOX AND RABBIT HOUNDS. COLLIE DOGS.

Write us for complete price list of varieties. Remember we won 90 per cent of the Blue Ribbons the last two years at the State Fairs. Order your eggs for hatching, poultry and stock of

L. H. WHITE, Proprietor,

ENVILLA STOCK FARM,  
Cogswell, N. D.



give a little more for a mare, for then, if anything happens to her and she can't work, I can breed her.

Take the neighborhood in which I am writing, and for the last forty years there have been two and three real good heavy stallions traveling and doing a good business, here every year, horses that cost their owners in many cases, from \$2,000 to \$3,000, all imported, and last summer I asked the owner of one how many mares he was getting and he said about a hundred. I asked how many of them were mares from which a man should expect a good draft colt. He considered carefully, and said, about ten. Think of it, after forty years, one in ten, and I have seen going away from the station by the carload the best type of young mares, going because they sold well; the culls were kept at home. This is killing the goose that lays the golden egg. If a farmer has two fillies, one worth \$250, the other worth \$75, and a buyer comes along, eight times out of ten he will sell the good one and keep the other; and nine times out of ten he will breed her and raise some more just like her, and then blame the sire and the man who has risked a couple of thousand dollars, often all he has, to place a good horse at his disposal.

#### LATEST MARKET REPORTS

By W. R. Ingram, Mgr. Union Stock Yards, So. St. Paul.

April 7.

Receipts of cattle and calves for the week ending today is about 9500 head. Most of these run to stockers and feeders. Offerings were only of a fair quality. Good stuff finding an early market; common light stuff was a little slow. Prices quote good butcher steers \$6.00 to \$6.75. Steers fair to good \$5.00 to \$5.75 cows and heifers good to choice, \$4.00 to \$5.00; fair to good \$3.00 to \$4.50; veal calves common to choice \$1.50 to \$5.00; canner cows and cutters \$2.00 to \$2.75.

Hog prices range as follows:

	Price Range	Bulk Price
Tuesday	\$5.75-6.05	5.90-5.95
Wednesday	5.90-6.05	5.90-5.95
Thursday	5.85-6.00	5.90-6.00
Friday	5.75-5.90	5.85-5.90
Saturday	5.80-5.95	5.85-5.90
Monday	5.75-5.95	5.80-5.85
Tuesday	5.75-5.95	5.85-5.90

Sheep prices are good when compared with the quality of stock received. Quotations as follows:

#### Wooled Sheep & Lambs

Yearlings, good to choice	\$6.50-7.00
Ewes, good to choice	5.50-6.25
Wethers, good to choice	6.00-6.75
Bucks good to choice	3.50-5.00
Bucks good to choice	3.50-5.00
Lambs, good to choice	7.00-7.40

#### Shorn Sheep & Lambs

Lambs, good to choice	\$6.50-6.75
-----------------------	-------------

Yearlings good to choice	6.00-6.50		
Ewes good to choice	5.00-5.75		
Wethers good to choice	5.75-6.15		
	Cattle	Hogs	Sheep
Two days this wk	3800	5577	140
Two da. this wk	3800	5577	140
Same, last wk.	6269	7923	6103
Jan. 1, to date	90804	450670	85149
Same, last year	72944	267523	49414
Increase	17860	183147	35735

Decrease

April 14.

Cattle-Market about 15 cents to 25 cents lower than last week—very few good butcher cattle received. Demand strong for good butcher cattle.

Steers, good to choice	\$6.00-6.75
Steers, fair to good	5.00-5.75
Cows-heifers, good to choice	4.00-5.00
Cows-heifers, fair to good	3.00-4.00
Cutter Cows	2.50-2.75
Canners	2.00-2.25
Butcher Bulls	3.50-4.50
Bolgana Bulls	3.00-3.50
Veal Calves good to choice	3.75-5.00
Veal Calves, common	1.50-3.00

#### Hogs

	Range Price	Bulk Price
Tuesday	5.75-5.97½	5.85-5.90
Wednesday	5.80-5.95	5.80-5.90
Thursday	5.75-5.90	5.80-5.85
Friday	5.75-5.90	5.80-5.85
Saturday	5.75-5.85	5.75-5.80
Monday	5.70-5.80	5.70-5.75
Tuesday	5.60-5.75	5.65-5.70

#### Sheep

##### Wooled Sheep and Lambs

Yearlings, good to choice	6.50-6.75
Ewes, good to choice	5.50-6.00
Wethers, good to choice	6.00-6.35
Bucks, good to choice	3.50-5.50
Lambs, good to choice	6.75-7.25

##### Shorn Sheep and Lambs

Lambs, good to choice	6.25-6.50
Yearlings, good to choice	5.75-6.25
Ewes, good to choice	5.00-5.75
Wethers, good to choice	5.60-6.00

#### GREEN FORAGE FOR HOGS

An especially timely bulletin has just been issued from the Missouri Experiment Station by Dean H. J. Waters.

Thirty-six pigs weighing about 50 lbs. each were fed in lots on different forage crops in connection with corn until they were ready for market, account being kept of the cost of gains made.

In cheapness of gains the feeds used ranked as follows: Corn and skim milk,

cheapest; corn and alfalfa, second; corn and red clover, third; corn and bluegrass, fourth; corn and rape, fifth; corn and ship stuff, sixth.

A saving of about 75 cents a hundred in the cost gain was effected by using green clover instead of fresh bluegrass. A saving of \$1 a hundred was affected by using alfalfa instead of bluegrass.

When it is realized that alfalfa comes on early and when properly clipped stays green all summer and until the very hard freezes of early winter, its importance as a hog pasture is apparent. Clover yields more forage per acre than bluegrass, and as shown by these experiments has a much higher, feeding value. It is of the utmost importance therefore to provide this sort of pasture for hogs rather than to require them to run on a bluegrass pasture, or even worse than bluegrass, a timothy pasture, or even far worse than this, to confine them in a dry lot in the summer-time.

This bulletin recommends a succession of crops for profitable hog pasture. The bulletin is for free distribution, and may be had by addressing the Experiment Station at Columbia, Mo.

#### POLAND CHINAS

We have for sale several choice spring pigs sired by "Giant Perfection" No. 3477, a grandson of Chief Perfection, the 2nd, the greatest hog the Poland China breed has ever produced. CENTER LANE STOCK FARM, Kenmare, North Dakota

#### GREENVIEW STOCK FARM

Has 100 Poland China young pigs, sired by Rockwell Chief, Corwin U. S. 2nd and Prince Corwin. Sows strongly bred of Tecumseh blood. Orders booked now for fall delivery. Pure Scotch and Scotch Cross Shorthorns, Young and old stock for sale. Call or write if you want North Dakota bred Poland Chinas or Shorthorns.

E. C. BUTLER,  
Cooperstown, N. D.

#### PLEASANT GROVE HERD

##### Shorthorn Cattle, Poland China Swine

We are making a specialty this season of shipping spring pigs. By shipping when not too large the express bill is lighter. We can supply boars and sows not related. Write us for descriptions and prices.

#### WINN BROTHERS,

Redwood Falls,

Minn.

#### Registered Black Percheron Horses and Red Polled Cattle.

Yamagata, 40966, 1st premium, gold medal and championship at N. D. State Fair 1906. Zip 13342, herd bull, first prize winner and sweepstakes N. D. State Fair 1905.

#### YOUNG STOCK FOR SALE.

CENTER LANE STOCK FARM,  
Kenmare, N. D.

## Clover Hill Shorthorns

Young cows, heifers and bulls for sale. Herd headed by Imp. Ben Lomond 224418. Prices reasonable. Jas. O'Hara, Lanesboro, Minn.



## Poultry Department

By MRS. B. F. WILCOXON.

It is not wise to run an incubator in a living room to which the run has access.

A small flock, well kept and cared for will be more profitable than a larger one indifferently handled.

The poultry business is one of many phases, each of which requires individual study and local treatment.

New blood occasionally is necessary for the flock. Inbreeding causes degeneration and loss of vigor.

Filth and vermin are the greatest obstacles to success in the poultry business. Keep the vermin away by cleanliness.

A farmer who has a large orchard and does not keep a flock of poultry is wasting valuable space which could be utilized to advantage.

I believe in the summer hatched chicks—there is money in them—but it is absolutely necessary that they be separated from the early ones and given every advantage that the early ones had.

We must use eggs that are from a flock of a hardy, prolific variety. The flock must be strong in vitality. We should infuse new strains of blood into the flock. Don't interbreed too closely, this causes many chicks to die in the shell.

The pitfall into which many will land will be starting with quantity rather than quality. Ten dollars invested in a trio of well-bred birds from an honest breeder will be money well spent. From such birds one can rear a flock that will be a delight to the eye.

By keeping the market stock in good condition, and dressing them fat and plump you will always have a good market for dressed birds. The fowls should be kept in good average condition all the time. It is poor policy to feast the birds one week and starve them the next.

Dead chicks in the shell are caused from many reasons that we know and from many that we don't know.

We know too much or too little heat; too much or too little ventilation; too much or too little cooling. These are in regard to artificial incubation.

We have to work out this problem for ourself. This is the end of our business and our ability to do this determines our

success or failure in regard to incubation.

Don't let the early and late chickens run together, they will trample over and crowd back the late ones, the result will be that the late ones will not get the amount of food necessary to force their growth. Then, too the raiser who has a large number of early chicks generally loses interest as warm weather approaches and he does not look after the welfare of the late broods as carefully as he did those that hatched early in the season; when this is the cause the late chicks are of a little value.

Suppose you desire to hatch during the summer in the hopes of having enough stock to supply all demands. You should care for them the same as you did those which you took from the nest or incubator in January or February. When the December and January shows are on and many of your early cockerels are beginning to look a little coarse and the early pullets have lost some of their grace and beauty on account of having commenced to lay, you go to your flock of summer-hatched chicks and pick out your cockerels and pullets that will carry off the ribbons. This has been proven many times.

Hens that are left all day to the mercy of cold winds cannot be expected to lay. Shrubs make fine wind breaks, but if you have none, build a tight board fence on the windy side of your poultry run. If you have an old iron vessel that is suitable, put the water in it. Iron rust is good for chickens. Fresh water should be given every day.

If your growing chickens have not been culled and the male birds all disposed of that are not wanted for breeding, it is high time it was done. To keep 50 or 100 cockerels ranting around till they can be eaten one by one does not savor of thrift. Sell them off and then hatch a few broods of late chickens to have for eating along.

## Don't Sell Your Eggs

When they are cheap pack them with my new method—will keep two years—will be as fresh as new laid eggs. No special place required to store them. Cost only  $\frac{1}{2}$ ¢ per dozen to pack them. Write me for circular.

MRS. B. F. WILCOXON,  
Ft. Des Moines, Ia. Box 50.

## BARGAINS IN EGGS

From prize winning and high scoring, Barred, and White, P. Rocks, White and Silver L. Wyandotte, S. C. Brown and White Leghorns, M. Bronze Turkeys. Extra fine Toulouse Geese and Pekin Ducks. Same pens have 10 females with an average score of 93 points. Write for prices and winnings.

FRANK KOENEN  
R. R. 4. Mankato, Minn.

### ROSE COMB WHITE LEGHORN EGGS

15 for \$1; 30 for \$1.50; 100 for \$4. Circular.  
M. F. Horning, - - - Alden, Minn.

"THE BREED THAT LAYS IS THE BREED THAT PAYS"

### ROSE COMB WHITE LEGHORNS

State Show Winners  
Eggs: \$1.25 per 15; \$3.00 per 45; \$5.00 per 100  
G. F. Babcock, - - - Turtle Lake, N. D.

## BIGGER POULTRY PROFITS

Our new 128-page Poultry Book teaches the inexperienced and gives the expert many valuable hints. Tells why "SUCCESSFUL" INCUBATORS and BROODERS are best. Offers 14 varieties of fine birds and eggs at low prices. Catalogue free. Booklet on "Proper Care of Chicks, Ducks, Geese and Turkeys," 10 cents. Poultry paper 1 year 10 cents.



DES MOINES INCUBATOR CO., 288 Second St., Des Moines, Ia.

## WHITE, BUFF AND GOLDEN WYANDOTTES

Strong, vigorous, quick maturing, heavy-laying, fowls. They are large, handsome, full-breasted, blocky birds with good combs, eyes and legs.

**EGGS** for hatching \$2.00 for 15; \$3.50 for 30; \$5.00 for 45; Incubator eggs \$6.00 for 100.

### THEY ARE PROFIT MAKERS TRAP-NESTED STANDARD BRED

Start a paying flock now. Get the benefit of my years of careful selection and mating. Free cataog. Satisfaction guaranteed.

E. C. Willard, 111 Moreland Ave.,  
Mankato, Minn.

## EGGS! EGGS! EGGS!

For hatching, from my heavy laying strains of **Thoroughbred Poultry**. Eggs from all varieties of Plymouth Rocks and Wyandottes at \$1.50 per 15, \$4.00 per 45, \$7.50 per 100; from all varieties of Leghorns \$1.00 per 15, \$2.50 per 45, \$5.00 per 100. **Satisfaction Guaranteed** in every sale. Send in your order, or write for my large illustrated circular. It tells all about my great laying strains of Fancy and Utility Poultry and about my Pigeons, Rabbits, Bull Terrier Dogs, etc.

### DAKOTA POULTRY FARM

A. K. Johnson, Prop. Kensal, N. D.



All varieties of standardbred chickens, ducks, geese, turkeys, peafowls. Send 4 cts. for catalog. J. J. Breaner, Dept. 11, Mankato, Minn.

Boys Interested in Corn Culture Contests Should Read Personal on Page 3.



# OILS, PAINTS, AND PAINT PIGMENTS.

## PAINT LEGISLATION

Not only are there a number of Paint Bills being introduced before the various State Legislatures, but two bills have been introduced into Congress looking towards National Legislation. One is known as the Marshall Honest Paint Bill, introduced by Congressman Marshall of this state, the other, the Dalzell Paint Bill, introduced by Congressman Dalzell of Pennsylvania.

The bills were referred to the Committee on Inter-State and Foreign Commerce, and on April 7th a hearing was given for those interested either in favor or in opposition to this measure being enacted into a law. At the hearing before the committee the general sentiment seemed to be strongly in favor of National Legislation on the part of the better class of paint manufacturers of the country. A few were opposed, one at least, because he represented the manufacturer of a product which was called "white lead" and which was sold as such, but which in reality was an adulterated product. Other opposition was on the ground of state rights vs. national authority with regard to all such matters.

Taken as a whole, however, the hearing proved very satisfactory, and it is likely that the Marshall Bill, with the very slight modification, will be enacted into a law at the present session of congress. If so, this will do more to clear away the uncertainties with regard to the enforcement of Paint Laws, and placing all spurious, imitation and adulterated paints in a class where they belong, than could possibly come from the enforcement of various state laws, which must of themselves differ.

It is a notable fact that the representatives of the National Association of Master House Painters and Decorators were favorable to Legislation, as were, also, the leading manufacturers represented.

## PRIMER FOR EXTERIOR SURFACES

In the April issue of the Painters' Magazine, in reply to a correspondent as to what would be the best material for a priming coat for exterior wooden buildings, they state as follows:

"In our opinion pure white lead ground in linseed oil, thinned with pure raw linseed oil and a trifle oil drier or oil and Terps Japan is the best primer for any kind of wood, but more especially for close-grained, soft and all hard woods. On soft and spongy wood,

yellow ochre may be used with pure white lead, but not to exceed one-third by weight to two-thirds of white lead, and should be of the best and finest variety."

They further state: "Above all, no matter what the primer, never use boiled linseed oil, but stick to pure raw, well-settled linseed oil, and do not mix fatty oil paint with your primer."

All Boys Interested in Corn Culture Contest Should Read Personal on Page 3.

## What Will It Do?

This is the question for you to ask when buying paint.

There are too many paints on the market that have no merits except that they sell at a low price or are made of S. P. Lead or Lead and Zinc.

What you want in paint is

- 1st.—DURABILITY
- 2nd.—COVERING CAPACITY
- 3rd.—APPEARANCE
- 4th.—COST PER YEAR TO PROPERLY PROTECT THE SURFACE

*The Heath & Milligan Paints*

possess the above qualities and insure BEST RESULTS

ASK OUR AGENT OR WRITE TO

*Heath & Milligan Mfg Co*

Paint and  
Color Makers



Chicago  
U. S. A.



The highest quality and best paint for all Good painting.

Every drop honest value—every can full measure.

**Satisfactory Results  
Guaranteed**

We insure the life of our Paint.

**BRADLEY & VROOMAN CO.,**  
PAINT MAKERS,  
CHICAGO.



## CHEAP PAINT

Can you tell me how to prepare a cheap paint or whitewash suitable for the interior of out buildings?

Reader.

## Answer

There are several formulae for whitewashes; one of the best known and most lasting is that known as the Government Lighthouse Formula for whitewash as follows:

Slake  $\frac{1}{2}$  bushel of lime with boiled water, keeping covered during process; strain it and add 1 peck of salt dissolved in water, 3 lbs., ground rice put in boiling water, and boil to a thin paste,  $\frac{1}{2}$  lb. Spanish whiting and 1 lb. clear glue dissolved in warm water. Mix this well together and let mixture stand for several days.

Keep the wash thus prepared in a kettle or portable furnace and when used put on as hot as possible with painter's or white-wash brush.

The ordinary whitewash may be made as follows:

Take about 3 lbs. of fresh stone lime and slake it with hot water. Stir in well about 1 lb. of salt and a small proportion of Portland cement. This whitewash is then ready for use and is much cheaper than the first one and easier handled, altho not so lasting.

## How to Avoid Stale Paint

Use Carter Strictly Pure White Lead, mix with pure linseed oil and dryer, and you will have fresh paint that will look better, wear longer and cover more than any canned paint mixture or substitute for pure white lead.

## CARTER Strictly Pure White Lead

is every atom paint. None of the clay, chalk, water, benzine, etc., that cause ordinary imitation paints to scale, crack and fade. Gives any desired color. Sold by reliable dealers everywhere.

Send for our booklet, "Pure Paint." Shows six beautiful color schemes, and tells how to properly paint farm buildings. Tells how to test white lead and detect adulterants, and will save you money. Sent FREE.

Address Dept. W

CARTER WHITE LEAD CO., Chicago, Ill.  
Factories: Chicago — Omaha.

## HOW TO USE TURPENTINE

The use of turpentine is sometimes objected to on the ground that it threatens the durability of the paint. I do not believe that this is so if used properly, and it has such decided advantages that in most cases I advise its use. If turpentine is not used, the linseed oil will lie on the knots and sappy streaks in a glossy, gummy film. Turpentine will cut the oil and leave the surface thinner, giving a slight tooth for later coats. Checking and peeling off from knots and sappy streaks are thus avoided. Turpentine is a decided help also in forcing the priming coat into the pores, thus affording a firmer anchorage.

Boiled linseed oil has the peculiar

quality of drying from the outer surface of the paint film down to the wood. Raw linseed oil starts to dry next to the wood and dries gradually outward. If a film of raw oil, therefore, is hard to the touch, you can be sure that it is dry clear thru, but the boiled oil may feel dry and yet stay gummy underneath for an indefinite period.

In the second and third coats, it is safe and sometimes desirable to use one-third strictly kettle boiled linseed oil with two-thirds raw oil, omitting the drier; but on the priming coat, I would not use the boiled oil at all, if it is possible to get a good, strong, pure turpentine drier. When boiled oil is used the quantity of turpentine must be increased.—From Dutch Boy Painter.

## Fortelling the Future of a Painting Job



The outcome of your paint investment, involving gallons of paint and many dollars' worth of labor, can be foretold, so far as the durability of materials is concerned, by examining a very small specimen of the White Lead which you propose to use.

Paint is made of a pigment and a liquid. The pigment, in order to have the best paint, must be Pure White Lead, the liquid Pure Linseed Oil, and these ingredients should be bought separately and mixed fresh as needed.

To test the paint, take a small bit of the White Lead, before it is mixed with the oil or coloring matter, and blow a flame upon it with a blowpipe. If little globules of metallic lead form, the White Lead is pure, and you may allow the painters to go ahead. If the mass is stubborn and refuses to turn to lead, the outlook is bad. The White Lead has been adulterated and you will rue the day you allow the imitation paint to be used on your house.

### We will send a Blowpipe free

The connection between this test and the durability (and consequent economy) of paint is told instructively in one of our booklets. This book, together with a blowpipe to test White Lead, will be sent free to any house-owner who intends to paint this season. Ask for Test Equipment 38.

### FULL WEIGHT KEGS

The Dutch Boy Painter on a keg guarantees not only purity but full weight of White Lead. Our packages are not weighed with the contents; each keg contains the amount of White Lead designated on the outside.

### NATIONAL LEAD COMPANY

in whichever of the following cities is nearest you:

New York, Boston, Buffalo, St. Louis,  
Cleveland, Cincinnati, Chicago,  
Philadelphia [John T. Lewis & Bros. Co.],  
Pittsburgh [National Lead & Oil Co.]







## Few People Know How Difficult it is to Make Good Paint

It's easy to print attractive labels, make big claims and advertise. It is not difficult to buy an ordinary paint mill. Raw materials may be had at the market price. Almost anyone can make paint—after a fashion. But to make as good paint as it is possible to produce—paint that will wear—requires years of experience, skilled workmen, better-than-ordinary materials, large facilities, experimental laboratories, careful supervision, honesty of purpose and many other things.

There is no other paint maker so favorably situated for the manufacture of good paint as The Sherwin-Williams Co. They operate the largest system of paint and varnish plants in the world, which gives them advantages for manufacturing that cannot be duplicated in any other way. They produce practically all the raw materials they use and are thus able to control their quality from the very source. When you buy

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LARGEST PAINT AND VARNISH MAKERS IN THE WORLD  
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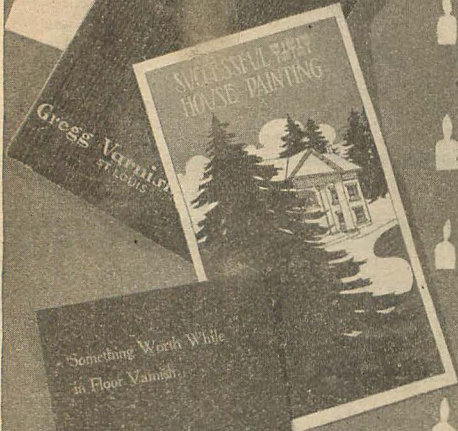
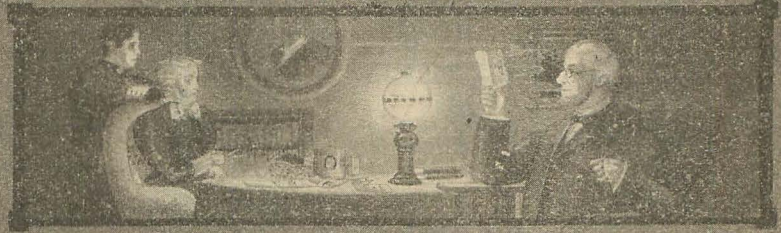
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## STORIES OF WAYS TO MAKE THE HOME BEAUTIFUL



## THE HORSE SHOE BRAND

To produce the highest quality in paint, there must be but one incentive; the will to do it. If the question of profit or individual preference is allowed to influence or prejudice its composition, success in reaching perfection is balked.

Science can recognize nothing but truth. Intention may be honest and desire laudable but if either swerve from the fixed principle of law and fact the discovery of truth must wait for the unbiased mind to reveal it.

The **HORSE SHOE PAINT** is made of materials recognized and accepted by all authorities practical and scientific as the best known for paint making. There is nothing in it about which there is any question or dispute. It's a pure zinc, lead and linseed oil paint, with the necessary pure drier and tinting color. All standard, nothing experimental.

When all authorities are as fully agreed as they are on zinc, lead and linseed oil, that some other material is necessary to improve it, we will add that to its composition. Until then the **HORSE SHOE BRAND** will remain as it is, a composition of the standard paint materials, free from everything doubtful or experimental. That is a course equally safe for all parties.

## Mound City Paint & Color Co.,

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